

Persistence and Attainment of 2003-04 Beginning Postsecondary Students: After Three Years

First Look



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August 2007

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Foreword

This report provides a brief description of the degree attainment and persistence of a nationally representative sample of students who began postsecondary education for the first time in the 2003–04 academic year. The report provides a first look at the experience of these students over three academic years, from July 2003 to June 2006, and provides information about rates of program completion, transfer, and attrition for students who first enrolled at various types of postsecondary institutions using data from the 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06).

The BPS survey is the longitudinal component of the 2003–04 National Postsecondary Student Aid Study (NPSAS:04), a nationally representative sample that includes students enrolled in all types of postsecondary institutions. The BPS:04/06 cohort consists of students in the NPSAS:04 sample that were identified as having enrolled in postsecondary education for the first time during the 2003–04 academic year. These beginning students were initially interviewed in 2004, at the end of their first year in postsecondary education, and then interviewed again in 2006, three years after they had started. The information in this report may be compared to a previous NCES report that examined the degree attainment and persistence after three years of students who began postsecondary education for the first time in 1995–96 (Berkner, Horn, and Clune 2000).

The estimates presented in the report were produced using the NCES Data Analysis System (DAS), a web-based software application that enables users to specify and generate tables for most of the postsecondary surveys conducted by NCES. The DAS produces the design-adjusted standard errors necessary for testing the statistical significance of differences in the estimates. The DAS for BPS:04/06 is available on the NCES website (<http://nces.ed.gov/das>). For more information on the DAS, see appendix B of this report.

Acknowledgments

The 2004–06 Beginning Postsecondary Students Longitudinal Study was conducted by RTI International and MPR Associates for the National Center of Education Statistics (NCES). Jennifer Wine of RTI was responsible for the overall direction and management of the project. Others at RTI who made major contributions were Jeff Franklin for student interviews; Joe Simpson for data processing; Melissa Cominole for instrument development; Theresa Gilligan, Donna Anderson, and Kristin Dudley for the data files; and Darryl Creel for imputations.

At MPR, Vicky Dingler, Stephen Lew, and Joanna Wu wrote programs for the derived variables and created the Data Analysis System files. Alicia Broadway formatted the tables and the text of the report.

At NCES, Tracy Hunt-White and Linda Zimble reviewed the work at every phase of the project and contributed many helpful comments and suggestions for improvements. Paula Knepper and Marilyn Seastrom, Chief Statistician, provided a comprehensive technical and methodological review of the report.

The report was also reviewed by C. Dennis Carroll and Thomas Weko at NCES, Daniel Goldenberg (Office of Postsecondary Education), Professor John Braxton (Vanderbilt University), Professor Marvin Titus (North Carolina State University), and Dawn Terkla (Tufts University).

Contents

	Page
Foreword	iii
Acknowledgments	iv
List of Tables	vi
List of Figures	viii
Introduction	1
Selected Results	3
References	5
Figures and Tables	7
Appendix A—Glossary	21
Appendix B—Technical Notes and Methodology	29

List of Tables

Table	Page
1 Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by first type of institution attended, degree plans first year, enrollment patterns, and student characteristics: All beginning students	9
2 Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, transfer and degree plans, enrollment patterns, and student characteristics: Students beginning at public 2-year institutions.....	11
3 Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by type of first institution attended, degree plans first year, enrollment patterns, and student characteristics: Students beginning at 4-year institutions.....	13
4 Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by first type of institution attended, degree plans first year, enrollment patterns, and student characteristics: All beginning students	15
5 Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, transfer and degree plans, enrollment patterns, and student characteristics: Students beginning at public 2-year institutions.....	17
6 Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, enrollment patterns, and student characteristics: Students beginning at 4-year institutions.....	19

Table	Page
Appendix B—Technical Notes and Methodology	
B-1	Numbers of NPSAS:04 sampled, eligible, and participating institutions and enrollment list participation rates, by type of institution: 2004 34
B-2	Numbers of NPSAS:04 sampled and eligible students and response rates, by type of institution and student type: 2004 35
B-3	Distribution of BPS:04/06 full-scale sample, by base-year response status: 2004 38
B-4	BPS:04/06 sample allocation for NPSAS:04 student interview: 2004 40
B-5	Allocation of ineligible and final eligible BPS:04/06 sample members by interview status: 2006..... 41
B-6	Summary of BPS:04/06 weight components: 2006 45
B-7	Summary of institution nonresponse bias analysis for all institutions, by type of institution: 2006..... 48
B-8	Comparison of BPS:04/06 respondents and nonrespondents, by characteristics: 2006.. 52
B-9	Summary of student nonresponse bias for all students, by type of institution: 2006..... 54

List of Figures

Figure		Page
1	Percentage distribution of first-time beginners who were recent (2003) high school graduates, enrolled full time in the fall of 2003, and had bachelor's degree plans, by their enrollment status or degree attainment at the first institution attended and anywhere in postsecondary education as of June 2006	8

Introduction

Approximately 4 million undergraduates started postsecondary education for the first time during the 2003–04 academic year, enrolling in a wide variety of institutions, including 4-year colleges and universities, public 2-year community colleges, and private for-profit institutions offering career-oriented and vocational programs. A sample of these first-time beginning students was surveyed in 2004, at the end of their first year in postsecondary education, and then surveyed again in 2006, three years after they had started. This report provides a first look at the results of the 2006 survey data to describe the patterns of enrollment and program completion of the 2003–04 beginning students during that three-year period.

The data in this report are from the 2004–06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06), the latest in a series of BPS studies covering the years 1990–94 (BPS: 90/94), 1996–2001 (BPS: 96/01), and now 2004–06 (BPS:04/06). The students in the BPS:04/06 study will be contacted again and interviewed in 2009. The descriptive reports and public access datasets for all of these studies are available on the NCES website (<http://nces.ed.gov/das>).

The BPS:04/06 study includes the results of the 2004 survey, administered during the students' first year of enrollment, as well as the results of the First Follow-up of 2006. The 2004 survey was administered as part of the 2003–04 National Postsecondary Student Aid Study (NPSAS:04). NPSAS:04 is a nationally representative sample of about 90,000 undergraduate, graduate, and first-professional students in about 1,600 postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico¹ that are eligible to participate in the federal Title IV student aid programs. Approximately 19,000 respondents were identified as first-time beginners in the NPSAS:04 survey and became the sample for the BPS:04/06 longitudinal study. The NPSAS:04 study sample represents the approximately 19 million undergraduates enrolled in 2003–04, while the BPS:04/06 study sample represents about 4 million of these undergraduates who were first-time beginners that academic year.

The information about the beginning postsecondary students in their first year comes from NPSAS:04, which is based on a wide variety of sources such as institutional records, federal financial aid applications, and federal student loan and Pell grant records, as well as a student

¹ No differences were detected in table totals when Puerto Rico was excluded.

interview. The information about the beginning postsecondary students in 2006 is primarily based on the follow-up student interview, supplemented with data from the same federal databases, college admissions test agencies, and the National Student Clearinghouse enrollment records. The student interviews in both years used a web-based questionnaire that was either self-administered or conducted via telephone with a trained interviewer. In 2006, about 15,000 students completed the interview, resulting in a weighted response rate of 77 percent. The technical notes in appendix B supply additional information about response rates, the methodology of the data collection, file preparation, and analysis.

The tables in this report present information about beginning student enrollment and program completion from two different perspectives. The first is from the perspective of the students. It looks at the beginning students' enrollment history and degree attainment at *any* postsecondary institution over the three-year period under consideration. This will be referred to as student *attainment and persistence anywhere* (tables 1–3). The second is from the perspective of the first institution attended. The first institution attended designates students as first-time beginners (or freshmen) and reports whether those students continue to be enrolled or complete a program *at that institution*. This perspective will be referred to as *attainment and retention at the first institution attended* (tables 4–6). The difference between these two perspectives reflects the fact that many students transfer out of the first institution attended. When beginning students leave the institution where they first enrolled and then enroll at a different institution, they continue to persist in postsecondary education, but from the perspective of the institution where they started, they have no longer been retained. Figure 1 illustrates the relationship of these two perspectives for first-time beginners who were recent (2003) high school graduates with bachelor's degree plans and were enrolled full time in the fall of 2003.

The normal length of time it takes for a full-time student to complete a program and attain a certificate or degree depends on the type of program. Vocational certificate programs normally take less than two years to complete, associate's degree programs can be completed in two or three years, and bachelor's degree programs can be completed in four or five years. The three-year period covered in this report (from July 2003 to June 2006) is long enough for students beginning in 2003–04 to complete certificates and associate's degrees, but too short for most students to complete bachelor's degrees at 4-year colleges and universities.

A glossary describing the variables used in the tables is provided in appendix A. All comparisons made in the Selected Findings were tested using Student's *t* statistic, and all differences cited were statistically significant at the .05 level. Standard errors for estimates in this report are available at <http://nces.ed.gov/das/library/reports.asp>.

Selected Results

Attainment and persistence anywhere through 2006

- Among the beginning students who were recent (2003) high school graduates, enrolled full time in the fall of 2003, and had bachelor's degree plans, 83 percent had not attained a degree and were still enrolled at some postsecondary institution three years later; 5 percent had attained a degree or certificate; and 12 percent had not attained any degree and were no longer enrolled in June 2006 (figure 1 and table 1).
- Among the 2003–04 beginning students who first enrolled at a public 2-year institution and then transferred to another institution, 18 percent had attained a certificate or associate's degree and were still enrolled at some postsecondary institution in June 2006; 62 percent had not yet attained any degree and were still enrolled at some postsecondary institution (table 2).
- Fifty percent of the beginning independent students who first enrolled at 4-year institutions in 2003–04 had not attained any degree and were no longer enrolled; 41 percent had not attained any degree, but were still enrolled; 5 percent had attained a degree or certificate and were still enrolled; and 5 percent had attained a degree or certificate and were no longer enrolled (table 3).

Attainment and retention at the first institution attended

- Among the beginning students who were recent (2003) high school graduates, enrolled full time in the fall of 2003, and had bachelor's degree plans, 70 percent were still enrolled at their first institution without a degree, 4 percent had attained a degree or certificate at their first institution, and 20 percent had transferred elsewhere without a degree by June 2006. Seven percent had left the first institution attended without a degree or certificate and did not enroll anywhere else within three years (figure 1 and table 4).
- Among the students who were recent (2003) high school graduates, first enrolled at a public 2-year institution full time in the fall of 2003, and had associate's degree plans, 23 percent attained an associate's degree at that institution, 31 percent were still enrolled there without a degree, 24 percent had transferred elsewhere without a degree by June 2006, and 21 percent had not attained any degree at the first institution and did not enroll anywhere else (table 5).
- Five percent of the beginning students who first enrolled at a doctorate-granting 4-year institution in 2003–04 had attained some degree at that institution within three years, 71 percent were still enrolled there without a degree, and 17 percent had transferred elsewhere without a degree by June 2006. Eight percent had left the institution and did not enroll anywhere else within three years (table 6).

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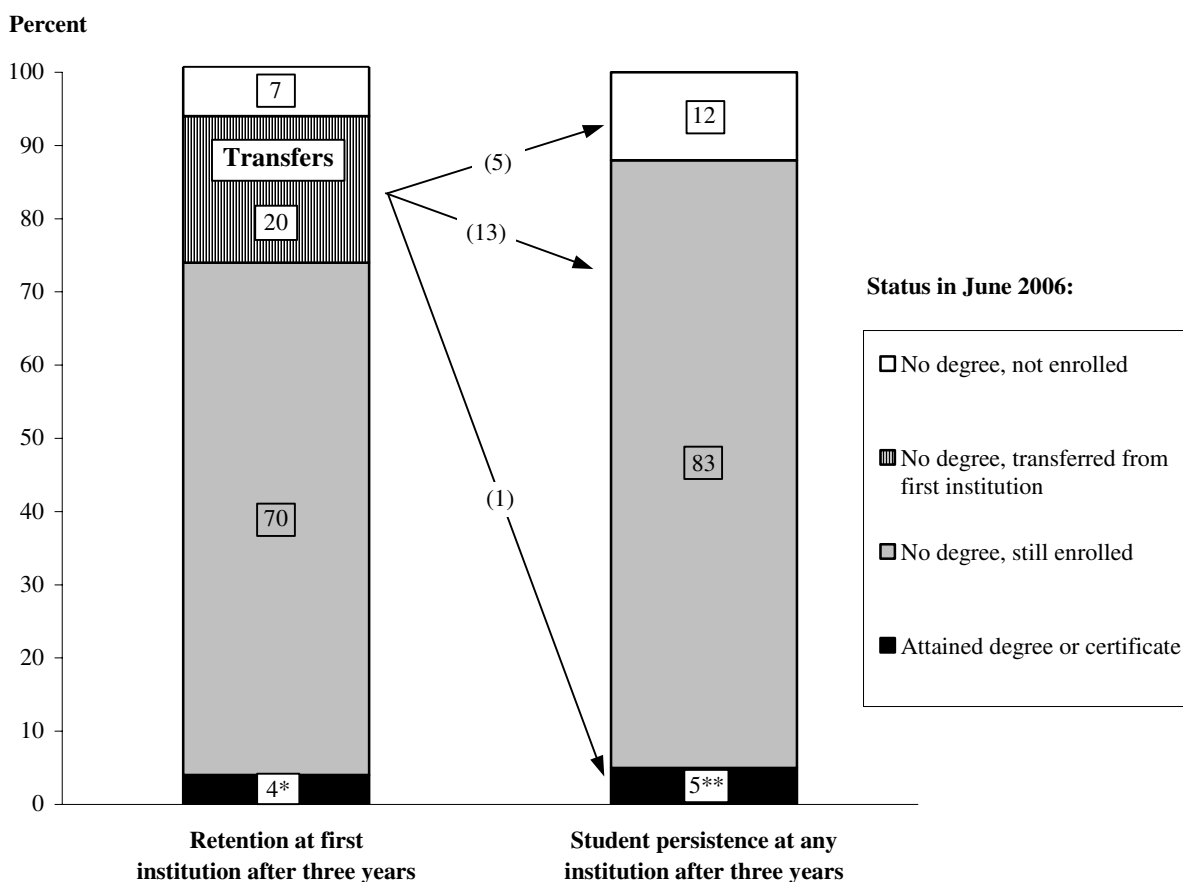
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Figures and Tables

Figure 1. Percentage distribution of first-time beginners who were recent (2003) high school graduates, enrolled full time in the fall of 2003, and had bachelor's degree plans, by their enrollment status or degree attainment at the first institution attended and anywhere in postsecondary education as of June 2006



* One percent associate's degrees and 3 percent bachelor's degrees.

** Two percent associate's degrees and 3 percent bachelor's degrees.

NOTE: The figure includes recent (2003) high school graduates enrolled full time in the fall of 2003 with bachelor's degree plans who started at any type of institution. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Table 1. Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by first type of institution attended, degree plans first year, enrollment patterns, and student characteristics: All beginning students

Institutional and student characteristics	Attained degree anywhere through 2006				Persistence anywhere through 2006				
	Any degree	Highest degree			Total	Attained degree, not enrolled	Attained degree, still enrolled	No degree, still enrolled	No degree, not enrolled
		Certificate	Associate's degree	Bachelor's degree					
Total	15.9	7.8	7.0	1.0	100.0	8.9	7.0	50.7	33.5
Type of first institution									
4-year									
Public	5.5	0.6	2.4	2.5	100.0	3.2	2.4	77.2	17.3
Private not-for-profit	7.1	1.0	3.9	2.2	100.0	4.0	3.1	76.8	16.1
Private for-profit	18.2	1.3	15.9	1.0	100.0	8.5	9.7	34.3	47.6
2-year									
Public	15.5	5.5	10.0	0.1	100.0	5.5	10.1	39.8	44.6
Private not-for-profit	31.0	10.2	20.8	#	100.0	18.3	12.7	29.6	39.3
Private for-profit	34.1	15.8	18.4	#	100.0	25.6	8.5	13.2	52.6
Less-than-2-year									
Public	63.1	62.3	0.6	0.1	100.0	51.8	11.3	6.9	30.0
Private for-profit	50.3	50.2	0.1	#	100.0	41.3	9.0	8.2	41.5
Level of first institution									
4-year	7.0	0.8	3.9	2.3	100.0	3.8	3.2	73.8	19.2
2-year	17.6	6.5	11.0	0.1	100.0	7.6	10.0	37.1	45.3
Less-than-2-year	52.2	51.9	0.2	#	100.0	42.8	9.4	8.3	39.5
Degree plans first year									
None	9.4	4.8	4.3	0.3	100.0	4.3	5.1	46.9	43.7
Certificate	45.8	43.7	2.0	0.1	100.0	36.4	9.5	13.2	41.0
Associate's degree	18.6	3.5	14.9	0.2	100.0	6.7	11.9	36.2	45.2
Bachelor's degree	5.1	0.6	2.2	2.3	100.0	3.0	2.1	77.2	17.7
Enrollment intensity through 2006									
Always full-time	18.3	8.6	8.3	1.4	100.0	11.1	7.2	53.8	27.9
Mixed	14.9	7.2	7.0	0.7	100.0	6.3	8.6	57.2	28.0
Always part-time	7.0	5.6	1.5	#	100.0	4.3	2.7	23.9	69.1
Transfer status through 2006									
Did not transfer	15.4	8.0	6.1	1.2	100.0	10.1	5.2	47.2	37.4
Transferred	17.9	6.9	10.7	0.3	100.0	3.7	14.2	65.2	16.9
Recent (2003) high school graduates enrolled full time in fall 2003									
Certificate plans	52.4	47.6	4.3	0.5	100.0	36.6	15.9	19.0	28.6
Associate's degree plans	28.5	2.4	25.7	0.4	100.0	8.2	20.2	40.1	31.4
Bachelor's degree plans	5.2	0.3	2.2	2.7	100.0	3.2	2.0	82.6	12.2

See notes at end of table.

Table 1. Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by first type of institution attended, degree plans first year, enrollment patterns, and student characteristics: All beginning students—Continued

Institutional and student characteristics	Attained degree anywhere through 2006				Persistence anywhere through 2006				
	Highest degree				Total	Attained degree, not enrolled	Attained degree, still enrolled	No degree, still enrolled	No degree, not enrolled
	Any degree	Certificate	Associate's degree	Bachelor's degree					
Gender									
Male	14.0	5.8	7.3	0.9	100.0	7.5	6.5	50.4	35.6
Female	17.2	9.3	6.8	1.1	100.0	9.9	7.3	50.9	31.9
Age first year enrolled									
18 years or younger	13.0	3.9	7.6	1.5	100.0	5.7	7.3	64.5	22.4
19 years	15.2	5.4	8.2	1.5	100.0	7.6	7.5	57.7	27.2
20–23 years	17.4	10.9	6.3	0.2	100.0	11.3	6.2	33.7	48.9
24–29 years	21.5	16.2	5.2	0.1	100.0	15.7	5.8	26.1	52.4
30 or older	21.4	16.4	4.9	0.1	100.0	15.1	6.3	24.7	53.9
Race/ethnicity									
White	15.0	6.1	7.7	1.3	100.0	8.0	7.0	53.8	31.2
Black	15.5	9.7	5.3	0.4	100.0	8.8	6.6	41.1	43.4
Hispanic	20.5	14.1	6.0	0.4	100.0	13.4	7.1	42.3	37.2
Asian/Pacific Islander	14.3	5.5	6.7	2.2	100.0	7.2	7.1	64.7	21.0
American Indian	14.1	10.4	3.6	0.0	100.0	9.6	4.5	50.5	35.4
Multiple races/other	14.8	6.7	7.3	0.8	100.0	7.5	7.3	48.9	36.3
Dependency status first year									
Dependent	13.7	4.7	7.6	1.4	100.0	6.6	7.1	60.7	25.6
Independent	21.2	15.4	5.6	0.2	100.0	14.6	6.6	26.2	52.7
Unmarried, no dependents	18.9	11.6	7.0	0.3	100.0	11.4	7.5	29.9	51.3
Single parent	22.4	17.1	5.1	0.2	100.0	16.7	5.7	22.5	55.1
Married	21.4	16.3	5.1	0.1	100.0	14.6	6.8	27.2	51.3
Highest education of parents									
High school or less	20.9	12.6	7.9	0.4	100.0	12.8	8.2	35.8	43.2
Some postsecondary	15.7	6.9	8.1	0.7	100.0	8.1	7.5	48.4	36.0
Bachelor's degree or higher	11.0	3.4	5.7	1.9	100.0	5.5	5.5	67.2	21.9
Dependent student family income									
Less than \$32,000	17.6	8.8	7.9	0.8	100.0	9.6	7.9	48.6	33.8
\$32,000–59,999	16.4	5.4	9.7	1.2	100.0	7.2	9.1	55.6	28.1
\$60,000–91,999	11.3	2.6	7.3	1.4	100.0	5.2	6.1	65.9	22.8
\$92,000 or more	9.1	1.4	5.4	2.4	100.0	4.1	5.0	74.5	16.4

Rounds to zero.

NOTE: Persistence and attainment anywhere include students who transferred out of the first institution attended. "Degree" includes certificates in vocational programs. Full-time enrollment is enrollment in 12 or more credits per term or 24 credits per year. Black includes African American, Hispanic includes Latino, American Indian includes Alaska Native, Pacific Islander includes Native Hawaiian, and Other includes respondents having origins in a race not listed. Pacific Islanders have been combined with Asians because of small sample sizes. Race categories exclude Hispanic origin unless specified. Dependent students were under age 24, unmarried, and had no dependents of their own in 2003. Family income of dependent students is the annual income of the parents in 2002. Categories represent the income quartile ranges of all dependent student families. Totals include students in private not-for-profit less-than-2-year institutions; sample size was too small to show as a separate category. This table includes students enrolled at postsecondary institutions in Puerto Rico. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Table 2. Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, transfer and degree plans, enrollment patterns, and student characteristics: Students beginning at public 2-year institutions

Institutional and student characteristics	Attained degree anywhere through 2006			Persistence anywhere through 2006				
	Highest degree			Total	Attained degree, not enrolled	Attained degree, still enrolled	No degree, still enrolled	No degree, not enrolled
	Any degree	Certificate	Associate's degree					
Total	15.5	5.5	10.0	100.0	5.5	10.1	39.8	44.6
Degree plans first year								
None	10.0	5.3	4.7	100.0	4.1	5.9	42.6	47.4
Certificate	31.8	26.6	5.2	100.0	21.3	10.5	21.2	47.0
Associate's degree	16.1	3.4	12.7	100.0	4.4	11.7	39.0	44.9
Bachelor's degree	8.5	1.7	6.3	100.0	1.7	6.8	54.8	36.7
Type of associate's degree								
Applied fields	17.6	5.2	12.4	100.0	7.3	10.3	33.9	48.5
General education/transfer	14.6	2.7	11.9	100.0	3.2	11.5	42.1	43.2
Transfer and degree plans								
Degree, no transfer	19.4	10.5	8.8	100.0	10.0	9.5	31.4	49.2
Degree and transfer	17.5	2.4	15.0	100.0	3.6	13.8	42.7	39.8
No degree, transfer	13.2	2.0	11.1	100.0	1.9	11.3	49.6	37.2
No degree and no transfer	12.8	8.3	4.4	100.0	7.7	5.1	32.4	54.8
Enrollment intensity through 2006								
Always full-time	22.8	5.8	16.8	100.0	8.6	14.1	36.5	40.7
Mixed	15.7	6.3	9.4	100.0	4.3	11.4	54.3	29.9
Always part-time	5.6	3.8	1.8	100.0	2.8	2.8	23.9	70.5
Transfer status through 2006								
Did not transfer	13.9	5.2	8.7	100.0	6.0	7.8	33.3	52.8
Transferred	21.2	6.4	14.7	100.0	3.5	17.8	62.3	16.4
Recent (2003) high school graduates enrolled full time in fall 2003								
Certificate plans	40.5	25.9	14.7	100.0	27.3	13.2	22.7	36.8
Associate's degree plans	26.8	2.2	24.6	100.0	6.0	20.7	42.9	30.4
Bachelor's degree plans	11.6	0.8	9.9	100.0	1.9	9.7	61.5	26.9

See notes at end of table.

Table 2. Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, transfer and degree plans, enrollment patterns, and student characteristics: Students beginning at public 2-year institutions—Continued

Institutional and student characteristics	Attained degree anywhere through 2006			Persistence anywhere through 2006				
	Any degree	Highest degree		Total	Attained degree, not enrolled	Attained degree, still enrolled	No degree, still enrolled	No degree, not enrolled
		Certificate	Associate's degree					
Gender								
Male	14.5	5.1	9.4	100.0	5.5	9.0	38.5	47.0
Female	16.3	5.7	10.5	100.0	5.4	10.9	40.9	42.8
Age first year enrolled								
18 years or younger	18.6	3.4	15.0	100.0	3.9	14.6	47.5	33.9
19 years	17.2	4.6	12.5	100.0	6.1	11.0	43.5	39.3
20–23 years	9.9	4.5	5.4	100.0	5.2	4.6	36.4	53.7
24–29 years	12.5	7.3	4.9	100.0	4.9	7.5	32.2	55.3
30 or older	14.5	10.2	4.3	100.0	8.0	6.5	28.1	57.5
Race/ethnicity								
White	17.6	6.0	11.6	100.0	6.1	11.5	38.7	43.6
Black	11.1	5.3	5.8	100.0	4.4	6.7	36.3	52.6
Hispanic	11.6	4.1	7.5	100.0	4.0	7.6	42.2	46.2
Asian/Pacific Islander	14.6	4.9	9.2	100.0	4.5	10.1	53.5	31.9
American Indian	14.0	7.5	6.6	100.0	6.7	7.4	59.6	26.3
Multiple races/other	15.7	3.8	11.9	100.0	5.6	10.1	39.5	44.8
Dependency status first year								
Dependent	17.2	4.0	13.2	100.0	5.1	12.0	45.2	37.6
Independent	12.7	8.0	4.6	100.0	6.1	6.7	30.6	56.7
Unmarried, no dependents	13.2	7.4	5.6	100.0	5.5	7.7	30.9	55.9
Single parent	9.8	5.6	4.1	100.0	4.7	5.1	29.9	60.3
Married	14.5	10.0	4.5	100.0	7.2	7.2	30.8	54.7
Highest education of parents								
High school or less	16.0	6.8	9.1	100.0	6.0	9.9	35.2	48.9
Some postsecondary	15.8	5.4	10.3	100.0	6.0	9.8	38.7	45.4
Bachelor's degree or higher	15.1	3.4	11.5	100.0	4.3	10.8	47.9	37.0
Dependent student family income								
Less than \$32,000	16.4	4.0	12.4	100.0	5.5	11.0	41.7	41.9
\$32,000–59,999	20.7	5.0	15.7	100.0	5.9	14.8	42.5	36.8
\$60,000–91,999	16.8	3.7	12.9	100.0	5.5	11.3	45.8	37.4
\$92,000 or more	13.7	2.6	11.1	100.0	3.2	10.5	53.4	32.9

NOTE: Persistence and attainment anywhere include students who transferred out of the first institution attended. "Degree" includes certificates in vocational programs. Full-time enrollment is enrollment in 12 or more credits per term or 24 credits per year. Black includes African American, Hispanic includes Latino, American Indian includes Alaska Native, Pacific Islander includes Native Hawaiian, and Other includes respondents having origins in a race not listed. Pacific Islanders have been combined with Asians because of small sample sizes. Race categories exclude Hispanic origin unless specified. Dependent students were under age 24, unmarried, and had no dependents of their own in 2003. Family income of dependent students is the annual income of the parents in 2002. Categories represent the income quartile ranges of all dependent student families. This table includes students enrolled at postsecondary institutions in Puerto Rico. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Table 3. Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by type of first institution attended, degree plans first year, enrollment patterns, and student characteristics: Students beginning at 4-year institutions

Institutional and student characteristics	Attained degree anywhere through 2006				Persistence anywhere through 2006				
	Highest degree				Total	Attained degree, not enrolled	Attained degree, still enrolled	No degree, still enrolled	No degree, not enrolled
	Any degree	Certificate	Associate's degree	Bachelor's degree					
Total	7.0	0.8	3.9	2.3	100.0	3.8	3.2	73.8	19.2
Type of first institution									
Public 4-year	5.5	0.6	2.4	2.5	100.0	3.2	2.4	77.2	17.3
Private not-for-profit 4-year	7.1	1.0	3.9	2.2	100.0	4.0	3.1	76.8	16.1
Private for-profit 4-year	18.2	1.3	15.9	1.0	100.0	8.5	9.7	34.3	47.6
Doctorate-granting status of first institution									
Doctorate-granting	5.7	0.6	2.2	2.9	100.0	3.4	2.3	81.4	12.9
Non-doctorate-granting	8.3	1.0	5.6	1.7	100.0	4.3	4.0	66.1	25.6
Degree plans first year									
None	5.8	0.9	3.7	1.2	100.0	2.5	3.3	65.7	28.5
Certificate	14.1	11.2	0.8	2.1	100.0	12.1	2.0	49.0	36.9
Associate's degree	23.7	1.7	20.7	1.2	100.0	9.0	14.6	34.7	41.6
Bachelor's degree	4.5	0.4	1.6	2.5	100.0	3.0	1.5	80.5	15.0
Enrollment intensity through 2006									
Always full-time	7.4	0.6	4.3	2.5	100.0	4.0	3.4	76.1	16.5
Mixed	6.5	1.5	3.0	2.0	100.0	3.9	2.7	71.1	22.4
Always part-time	0.7	0.7	#	#	100.0	0.6	0.1	30.1	69.2
Transfer status through 2006									
Did not transfer	6.8	0.5	3.6	2.7	100.0	4.2	2.6	73.5	19.7
Transferred	7.8	1.8	5.5	0.5	100.0	2.3	5.5	75.0	17.2
Recent (2003) high school graduates enrolled full time in fall 2003									
Certificate plans	11.6	6.6	1.5	3.5	100.0	8.2	3.4	71.1	17.3
Associate's degree plans	32.2	1.4	28.7	2.0	100.0	11.2	21.0	37.7	30.1
Bachelor's degree plans	4.8	0.3	1.7	2.8	100.0	3.3	1.5	84.2	11.1

See notes at end of table.

Table 3. Degree attainment and persistence anywhere of 2003–04 beginning postsecondary students as of June 2006, by type of first institution attended, degree plans first year, enrollment patterns, and student characteristics: Students beginning at 4-year institutions—Continued

Institutional and student characteristics	Attained degree anywhere through 2006				Persistence anywhere through 2006				
	Highest degree				Total	Attained degree, not enrolled	Attained degree, still enrolled	No degree, still enrolled	No degree, not enrolled
	Any degree	Certificate	Associate's degree	Bachelor's degree					
Gender									
Male	6.9	0.6	4.3	2.0	100.0	3.6	3.3	71.1	22.0
Female	7.1	0.9	3.6	2.5	100.0	4.0	3.0	75.8	17.1
Age first year enrolled									
18 years or younger	6.1	0.6	3.1	2.4	100.0	3.5	2.6	79.6	14.3
19 years	8.1	0.5	4.6	3.0	100.0	4.5	3.5	77.0	14.9
20–23 years	7.0	1.2	4.9	0.9	100.0	2.7	4.2	51.4	41.6
24–29 years	10.4	2.5	7.8	0.1	100.0	5.9	4.5	39.3	50.3
30 or older	9.1	2.5	6.2	0.4	100.0	4.4	4.7	38.2	52.8
Race/ethnicity									
White	7.1	0.6	4.0	2.6	100.0	4.1	3.1	75.4	17.5
Black	6.3	1.7	3.4	1.1	100.0	3.0	3.3	66.7	27.1
Hispanic	6.0	0.8	3.8	1.4	100.0	3.6	2.4	69.8	24.2
Asian/Pacific Islander	9.3	1.1	4.5	3.7	100.0	4.5	4.8	79.5	11.2
American Indian	1.0	0.3	0.7	0.0	100.0	#	1.0	59.0	40.1
Multiple races/other	6.2	0.7	3.8	1.7	100.0	2.6	3.6	68.6	25.2
Dependency status first year									
Dependent	6.7	0.6	3.6	2.5	100.0	3.7	3.0	78.0	15.3
Independent	9.2	2.3	6.3	0.6	100.0	4.7	4.5	41.1	49.7
Unmarried, no dependents	8.0	0.9	6.5	0.6	100.0	5.6	2.3	48.0	44.1
Single parent	11.2	4.1	6.4	0.7	100.0	5.3	6.0	32.4	56.4
Married	8.0	1.7	5.9	0.4	100.0	3.1	4.9	44.4	47.6
Highest education of parents									
High school or less	8.5	1.4	5.6	1.5	100.0	4.3	4.2	58.4	33.1
Some postsecondary	8.1	0.9	5.5	1.7	100.0	3.7	4.3	71.1	20.8
Bachelor's degree or higher	5.9	0.4	2.6	2.9	100.0	3.7	2.2	81.8	12.3
Dependent student family income									
Less than \$32,000	7.0	1.1	4.1	1.9	100.0	3.7	3.4	69.4	23.5
\$32,000–59,999	7.7	0.4	5.0	2.3	100.0	4.1	3.6	73.3	19.0
\$60,000–91,999	6.1	0.8	3.0	2.3	100.0	3.7	2.5	82.2	11.6
\$92,000 or more	6.4	0.1	2.8	3.4	100.0	3.7	2.7	84.0	9.6

Rounds to zero.

NOTE: Persistence and attainment anywhere include students who transferred out of the first institution attended. "Degree" includes certificates in vocational programs. Full-time enrollment is enrollment in 12 or more credits per term or 24 credits per year. Black includes African American, Hispanic includes Latino, American Indian includes Alaska Native, Pacific Islander includes Native Hawaiian, and Other includes respondents having origins in a race not listed. Pacific Islanders have been combined with Asians because of small sample sizes. Race categories exclude Hispanic origin unless specified. Dependent students were under age 24, unmarried, and had no dependents of their own in 2003. Family income of dependent students is the annual income of the parents in 2002. Categories represent the income quartile ranges of all dependent student families. This table includes students enrolled at postsecondary institutions in Puerto Rico. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Table 4. Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by first type of institution attended, degree plans first year, enrollment patterns, and student characteristics: All beginning students

Institutional and student characteristics	Attained degree at the first institution through 2006				Retention at the first institution through 2006		
	Any degree	Highest degree			No degree, still enrolled	No degree, transferred elsewhere	No degree, did not enroll anywhere
		Certificate	Associate's degree	Bachelor's degree			
Total	14.4	7.2	6.3	1.0	43.0	17.2	25.5
Type of first institution							
4-year							
Public	4.1	0.2	1.4	2.5	65.6	19.0	11.3
Private not-for-profit	6.0	0.6	3.2	2.1	65.6	18.0	10.4
Private for-profit	16.9	0.9	15.1	1.0	36.8	11.7	34.6
2-year							
Public	13.7	4.4	9.3	†	32.1	19.5	34.7
Private not-for-profit	28.9	9.0	19.9	†	17.3	23.7	30.2
Private for-profit	33.6	15.6	18.1	†	17.8	6.5	42.1
Less-than-2-year							
Public	62.0	62.0	†	†	5.0	6.3	26.7
Private for-profit	50.0	50.0	†	†	8.4	5.1	36.4
Level of first institution							
4-year	5.7	0.4	3.1	2.2	63.4	18.1	12.8
2-year	15.9	5.6	10.3	†	30.5	18.4	35.3
Less-than-2-year	51.7	51.7	†	†	8.1	5.4	34.8
Degree plans first year							
None	7.8	3.9	3.7	0.3	35.1	23.2	33.9
Certificate	44.8	42.9	1.8	0.1	11.9	6.9	36.4
Associate's degree	16.8	2.6	14.0	0.1	32.3	16.6	34.3
Bachelor's degree	4.0	0.3	1.5	2.2	64.9	19.5	11.6
Enrollment intensity through 2006							
Always full-time	16.9	8.1	7.5	1.4	46.1	15.7	21.4
Mixed	12.7	5.9	6.2	0.6	44.2	26.6	16.5
Always part-time	7.0	5.5	1.5	#	26.7	5.1	61.2
Recent (2003) high school graduates enrolled full time in fall 2003							
Certificate plans	51.0	46.5	4.1	0.4	14.7	9.8	24.4
Associate's degree plans	26.0	1.6	24.0	0.3	29.8	22.7	21.5
Bachelor's degree plans	4.1	0.1	1.4	2.6	69.5	19.7	6.7

See notes at end of table.

Table 4. Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by first type of institution attended, degree plans first year, enrollment patterns, and student characteristics: All beginning students—Continued

Institutional and student characteristics	Attained degree at the first institution through 2006				Retention at the first institution through 2006		
	Any degree	Highest degree			No degree, still enrolled	No degree, transferred elsewhere	No degree, did not enroll anywhere
		Certificate	Associate's degree	Bachelor's degree			
Gender							
Male	12.5	5.1	6.5	0.9	41.7	18.7	27.1
Female	15.8	8.7	6.1	1.0	43.9	16.1	24.3
Age first year enrolled							
18 years or younger	11.3	3.3	6.6	1.4	53.0	20.7	15.0
19 years	13.0	4.5	7.1	1.5	46.3	21.2	19.5
20–23 years	16.7	10.3	6.2	0.2	29.8	14.1	39.4
24–29 years	20.8	15.8	5.0	#	27.5	8.8	43.0
30 or older	21.0	16.2	4.7	0.1	26.6	6.6	45.8
Race/ethnicity							
White	13.5	5.6	6.8	1.2	45.0	18.1	23.4
Black	14.3	9.0	5.0	0.4	35.8	15.3	34.6
Hispanic	19.4	13.5	5.5	0.4	38.5	13.8	28.3
Asian/Pacific Islander	11.7	3.7	6.1	1.9	52.4	21.1	14.8
American Indian	10.7	8.2	2.4	#	49.0	14.3	26.1
Multiple races/other	13.7	5.9	6.9	0.8	39.7	17.0	29.7
Dependency status first year							
Dependent	11.9	3.9	6.7	1.3	49.5	20.4	18.2
Independent	20.5	15.1	5.4	0.1	27.1	9.3	43.1
Unmarried, no dependents	18.1	11.1	6.8	0.1	28.0	12.2	41.7
Single parent	21.8	16.6	5.1	0.1	26.1	7.5	44.5
Married	20.9	16.1	4.7	0.1	27.3	9.2	42.6
Highest education of parents							
High school or less	19.9	12.0	7.4	0.4	32.6	13.1	34.5
Some postsecondary	13.5	6.0	6.9	0.6	40.9	18.7	26.8
Bachelor's degree or higher	9.7	2.9	5.1	1.7	54.7	20.4	15.3
Dependent student family income							
Less than \$32,000	16.0	7.9	7.3	0.8	42.1	16.5	25.4
\$32,000–59,999	14.1	4.5	8.5	1.1	46.1	19.5	20.3
\$60,000–91,999	9.3	1.7	6.3	1.3	52.9	22.3	15.5
\$92,000 or more	7.8	1.1	4.4	2.3	58.5	23.2	10.4

† Not applicable.

Rounds to zero.

NOTE: "Degree" includes certificates in vocational programs. Students who attained a degree and continued to be enrolled at the first institution are only included in the degree columns. Full-time enrollment is enrollment in 12 or more credits per term or 24 credits per year. Black includes African American, Hispanic includes Latino, American Indian includes Alaska Native, Pacific Islander includes Native Hawaiian, and Other includes respondents having origins in a race not listed. Pacific Islanders have been combined with Asians because of small sample sizes. Race categories exclude Hispanic origin unless specified. Dependent students were under age 24, unmarried, and had no dependents of their own in 2003. Family income of dependent students is the annual income of the parents in 2002. Categories represent the income quartile ranges of all dependent student families. Totals include students in private not-for-profit less-than-2-year institutions; sample size was too small to show as a separate category. This table includes students enrolled at postsecondary institutions in Puerto Rico. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Table 5. Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, transfer and degree plans, enrollment patterns, and student characteristics: Students beginning at public 2-year institutions

Institutional and student characteristics	Attained degree at the first institution through 2006			Retention at the first institution through 2006		
	Any degree	Highest degree		No degree, still enrolled	No degree, transferred elsewhere	No degree, did not enroll anywhere
		Certificate	Associate's degree			
Total	13.7	4.4	9.3	32.1	19.5	34.7
Degree plans first year						
None	8.3	4.1	4.3	30.5	23.7	37.5
Certificate	29.4	24.2	5.2	19.7	10.0	40.9
Associate's degree	14.3	2.5	11.8	33.5	17.6	34.6
Bachelor's degree	7.0	1.4	5.6	36.3	31.5	25.2
Type of associate's degree						
Applied fields	16.4	4.4	12.0	29.4	15.7	38.5
General education/transfer	12.7	1.8	11.0	35.1	19.5	32.6
Transfer and degree plans						
Degree, no transfer	17.9	9.5	8.4	31.3	11.2	39.6
Degree and transfer	15.9	1.9	14.0	36.8	17.6	29.8
No degree, transfer	11.5	1.2	10.3	33.7	27.7	27.1
No degree and no transfer	10.2	6.4	3.8	25.9	19.1	44.7
Enrollment intensity through 2006						
Always full-time	20.5	4.6	15.9	25.6	22.4	31.5
Mixed	13.0	4.7	8.4	42.3	27.3	17.3
Always part-time	5.5	3.8	1.8	26.6	4.8	63.1
Recent (2003) high school graduates enrolled full time in fall 2003						
Certificate plans	38.0	23.4	14.7	17.9	14.7	29.4
Associate's degree plans	24.5	1.4	23.1	30.5	24.3	20.6
Bachelor's degree plans	9.8	0.4	9.4	36.6	38.7	14.9

See notes at end of table.

Table 5. Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, transfer and degree plans, enrollment patterns, and student characteristics: Students beginning at public 2-year institutions —Continued

Institutional and student characteristics	Attained degree at the first institution through 2006			Retention at the first institution through 2006		
	Any degree	Highest degree		No degree, still enrolled	No degree, transferred elsewhere	No degree, did not enroll anywhere
		Certificate	Associate's degree			
Gender						
Male	12.9	4.0	8.9	29.8	20.6	36.7
Female	14.4	4.8	9.6	33.9	18.7	33.1
Age first year enrolled						
18 years or younger	15.8	2.2	13.7	34.6	25.8	23.7
19 years	14.2	2.5	11.6	31.2	25.7	28.9
20–23 years	9.0	3.9	5.2	32.1	15.6	43.2
24–29 years	11.4	6.8	4.6	31.6	13.2	43.8
30 or older	14.4	10.1	4.3	28.9	7.1	49.6
Race/ethnicity						
White	15.7	5.1	10.7	29.4	20.6	34.3
Black	10.0	4.6	5.4	33.6	16.0	40.4
Hispanic	10.3	3.2	7.1	39.4	14.9	35.4
Asian/Pacific Islander	10.2	1.6	8.6	36.3	31.6	22.0
American Indian	7.0	3.0	4.0	50.5	20.9	21.6
Multiple races/other	14.2	2.7	11.5	31.4	19.5	34.9
Dependency status first year						
Dependent	14.6	2.5	12.1	33.2	24.4	27.7
Independent	12.1	7.7	4.4	30.2	11.1	46.6
Unmarried, no dependents	12.0	6.7	5.2	29.0	15.4	43.6
Single parent	9.3	5.3	4.1	33.0	8.4	49.3
Married	14.0	9.8	4.3	29.0	10.6	46.5
Highest education of parents						
High school or less	14.7	6.2	8.5	31.5	14.4	39.3
Some postsecondary	13.4	4.0	9.4	32.3	20.0	34.2
Bachelor's degree or higher	13.1	2.3	10.8	32.7	26.5	27.7
Dependent student family income						
Less than \$32,000	14.4	2.8	11.6	35.6	18.6	31.4
\$32,000–59,999	17.2	3.0	14.2	32.8	23.2	26.9
\$60,000–91,999	14.2	2.2	12.0	32.5	26.2	27.0
\$92,000 or more	11.8	1.9	9.9	31.3	33.0	23.9

NOTE: "Degree" includes certificates in vocational programs. Students who attained a degree and continued to be enrolled at the first institution are only included in the degree columns. Full-time enrollment is enrollment in 12 or more credits per term or 24 credits per year. Black includes African American, Hispanic includes Latino, American Indian includes Alaska Native, Pacific Islander includes Native Hawaiian, and Other includes respondents having origins in a race not listed. Pacific Islanders have been combined with Asians because of small sample sizes. Race categories exclude Hispanic origin unless specified. Dependent students were under age 24, unmarried, and had no dependents of their own in 2003. Family income of dependent students is the annual income of the parents in 2002. Categories represent the income quartile ranges of all dependent student families. This table includes students enrolled at postsecondary institutions in Puerto Rico. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Table 6. Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, enrollment patterns, and student characteristics: Students beginning at 4-year institutions

Institutional and student characteristics	Attained degree at the first institution through 2006				Retention at the first institution through 2006		
	Any degree	Highest degree			No degree, still enrolled	No degree, transferred elsewhere	No degree, did not enroll anywhere
		Certificate	Associate's degree	Bachelor's degree			
Total	5.7	0.4	3.1	2.2	63.4	18.1	12.8
Type of first institution							
Public 4-year	4.1	0.2	1.4	2.5	65.6	19.0	11.3
Private not-for-profit 4-year	6.0	0.6	3.2	2.1	65.6	18.0	10.4
Private for-profit 4-year	16.9	0.9	15.1	1.0	36.8	11.7	34.6
Doctorate-granting status of first institution							
Doctorate-granting	4.6	0.3	1.5	2.8	70.8	16.9	7.7
Non-doctorate-granting 4-year	6.8	0.5	4.6	1.7	55.9	19.3	18.0
Degree plans first year							
None	4.1	0.6	2.4	1.1	53.7	23.6	18.6
Certificate	11.1	9.1	0.4	1.6	40.1	19.1	29.7
Associate's degree	21.1	0.9	19.1	1.1	33.0	16.2	29.8
Bachelor's degree	3.5	0.1	0.9	2.5	68.9	18.0	9.6
Enrollment intensity through 2006							
Always full-time	6.0	0.3	3.3	2.4	66.9	15.9	11.2
Mixed	5.2	0.8	2.5	1.9	54.4	28.0	12.5
Always part-time	0.2	0.2	#	#	34.7	7.5	57.7
Recent (2003) high school graduates enrolled full time in fall 2003							
Certificate plans	6.4	3.1	0.8	2.5	53.5	26.7	13.4
Associate's degree plans	28.4	0.7	26.0	1.6	30.5	20.5	20.6
Bachelor's degree plans	3.7	#	0.9	2.8	71.8	18.4	6.1

See notes at end of table.

Table 6. Degree attainment and retention at the first institution attended of 2003–04 beginning postsecondary students as of June 2006, by degree plans first year, enrollment patterns, and student characteristics: Students beginning at 4-year institutions—Continued

Institutional and student characteristics	Attained degree at the first institution through 2006				Retention at the first institution through 2006		
	Highest degree				No degree, still enrolled	No degree, transferred elsewhere	No degree, did not enroll anywhere
	Any degree	Certificate	Associate's degree	Bachelor's degree			
Gender							
Male	5.5	0.3	3.2	2.0	60.4	19.4	14.8
Female	5.9	0.4	3.0	2.5	65.8	17.1	11.3
Age first year enrolled							
18 years or younger	4.9	0.3	2.3	2.4	67.9	18.9	8.3
19 years	6.4	0.2	3.4	2.9	64.6	19.7	9.3
20–23 years	5.9	0.4	4.6	0.9	44.6	17.3	32.2
24–29 years	10.0	2.5	7.4	0.1	41.8	5.7	42.4
30 or older	7.2	1.1	5.8	0.4	42.6	9.3	40.8
Race/ethnicity							
White	5.8	0.4	3.0	2.5	64.9	18.2	11.1
Black	4.7	0.7	3.0	1.0	56.1	18.7	20.5
Hispanic	4.7	0.4	2.9	1.4	60.4	19.7	15.1
Asian/Pacific Islander	8.0	0.3	4.1	3.6	69.6	14.7	7.7
American Indian	0.7	#	0.7	#	61.3	11.6	26.3
Multiple races/other	5.1	0.1	3.3	1.7	56.2	17.2	21.5
Dependency status first year							
Dependent	5.4	0.2	2.7	2.5	66.1	19.1	9.5
Independent	8.2	1.7	6.0	0.5	42.7	10.7	38.4
Unmarried, no dependents	7.7	0.9	6.3	0.6	44.1	11.0	37.2
Single parent	9.8	2.9	6.4	0.5	37.6	10.9	41.6
Married	6.9	1.2	5.3	0.4	46.9	10.1	36.1
Highest education of parents							
High school or less	7.2	0.7	5.0	1.5	52.1	16.5	24.2
Some postsecondary	5.9	0.6	3.6	1.7	60.0	20.7	13.5
Bachelor's degree or higher	5.0	0.2	2.0	2.8	69.7	18.0	7.3
Dependent student family income							
Less than \$32,000	5.6	0.4	3.5	1.8	60.6	18.3	15.5
\$32,000–59,999	6.2	0.2	3.7	2.3	62.6	18.1	13.1
\$60,000–91,999	4.6	0.3	2.1	2.2	68.8	20.0	6.6
\$92,000 or more	5.3	0.1	1.9	3.3	70.7	19.1	4.9

Rounds to zero.

NOTE: "Degree" includes certificates in vocational programs. Students who attained a degree and continued to be enrolled at the first institution are only included in the degree columns. Full-time enrollment is enrollment in 12 or more credits per term or 24 credits per year. Black includes African American, Hispanic includes Latino, American Indian includes Alaska Native, Pacific Islander includes Native Hawaiian, and Other includes respondents having origins in a race not listed. Pacific Islanders have been combined with Asians because of small sample sizes. Race categories exclude Hispanic origin unless specified. Dependent students were under age 24, unmarried, and had no dependents of their own in 2003. Family income of dependent students is the annual income of the parents in 2002. Categories represent the income quartile ranges of all dependent student families. This table includes students enrolled at postsecondary institutions in Puerto Rico. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

Appendix A—Glossary

All variables used in this report are described in this glossary. Variables were taken directly from the 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06) Data Analysis System (DAS), an NCES software application that generates tables from the BPS:04/06 data (see appendix B for a description of the DAS). The index below organizes the variables by category. The glossary items are listed in alphabetical order by variable name in the DAS (displayed in bold letters along the right-hand column).

GLOSSARY INDEX

INSTITUTIONAL CHARACTERISTICS

Type of first institutionFSECTOR
Level of first institution FLEVEL
Doctorate-granting status of first institution.. FSECDOC

ENROLLMENT CHARACTERISTICS

Degree plans first yearDGPLNY1
Type of associate's degree.....UGDEGAA
Transfer and degree plansDGTRNY1
Attendance intensity through June 2006..... ENINPT3Y
Transfer status through June 2006 TFNUM3Y
Recent (2003) high school graduates
enrolled full time in fall 2003..... FALLHSFT

STUDENT CHARACTERISTICS

Gender.....GENDER
Age first year enrolledAGE
Race/ethnicity RACE
Dependency status first year DEPEND5B
Highest education of parents..... PAREDUC
Dependent student family income..... DEPINC

PERSISTENCE AND ATTAINMENT

Highest degree attained anywhere through
June 2006 ATHTY3Y
Persistence anywhere through June 2006PRAT3Y
Highest degree attained at the first institution
through June 2006 ATHTYF3Y
Retention at the first institution through
June 2006 PROUTFI3

Age first year enrolled**AGE**

Indicates the student's age on December 31, 2003.

18 years or younger
 19 years
 20–23 years
 24–29 years
 30 years or older

Highest degree attained anywhere through June 2006**ATHTY3Y**

Indicates the highest degree attained by the student at any postsecondary institution by June 2006.

Certificate	The student's highest level of attainment at any institution by June 2006 was a vocational certificate.
Associate's degree	The student's highest level of attainment at any institution by June 2006 was an associate's degree.
Bachelor's degree	The student's highest level of attainment at any institution by June 2006 was a bachelor's degree.
Any degree	The student had attained a certificate, an associate's degree, or a bachelor's degree at some postsecondary institution by June 2006.

Highest degree attained at the first institution through June 2006**ATHTYF3Y**

Indicates the highest degree attained by the student at the first institution attended as of June 2006.

Certificate	The student's highest level of attainment by June 2006 at the first institution attended was a vocational certificate.
Associate's degree	The student's highest level of attainment by June 2006 at the first institution attended was an associate's degree.
Bachelor's degree	The student's highest level of attainment by June 2006 at the first institution attended was a bachelor's degree.
Any degree	The student had attained a certificate, an associate's degree, or a bachelor's degree by June 2006 at the first institution attended.

Dependency status first year**DEPEND5B**

Dependent
 Independent
 Unmarried, no dependents
 Single parent
 Married

Indicates whether the student was financially dependent or independent for federal financial aid purposes in 2003–04, and subcategories of independent students based on marital status and whether they had legal dependents.

Students were considered to be financially independent for federal financial aid purposes in 2003–04 if they met any of the following criteria:

The student was 24 years old or older as of 12/31/2003.
 The student had legal dependents other than spouse.
 The student was married.
 The student was an orphan or ward of the court.
 The student was a veteran of the U.S. Armed Forces.
 The student was enrolled in a graduate or professional program (beyond a bachelor's degree).

All other students under 24 were considered to be financially dependent on their parents unless they could demonstrate that they were receiving no parental support and were classified as independent by a financial aid officer using professional judgment.

For the independent student subcategories, “unmarried” and “single” include students who were separated, divorced, or widowed. “Married” students include those with or without dependents.

Dependent student family income**DEPINC**

Indicates dependent student parents' total income for 2002. Based on amounts reported in the financial aid application, estimates by students in the student interview, and stochastic imputation. Federal financial aid need analysis uses the family income in the calendar year prior to the academic year of enrollment. The low and high categories used in this report are approximately the lowest and highest 25 percent of the income range for all dependent student families.

Less than \$32,000
 \$32,000–59,999
 \$60,000–91,999
 \$92,000 or more

Degree plans first year**DGPLNY1**

Student's degree plans during the 2003–04 academic year. Based first on the 2004 interview question “What degree were you working on at [the NPSAS sample school]?” If this was not available, the program reported by the NPSAS institution was used. If neither was available, the program reported by the student in the financial aid application was used.

None	The student was not working on any degree.
Certificate	The student was working on a vocational certificate or diploma below an associate's degree.
Associate's degree	The student was working on an associate's degree.
Bachelor's degree	The student was working on a bachelor's degree, including those enrolled at less-than-4-year institutions who planned to transfer to a 4-year institution to complete a bachelor's degree.

Transfer and degree plans**DGTRNY1**

Indicates whether students at less-than-4-year institutions in 2003–04 planned to transfer to a 4-year institution and whether they had plans to complete a certificate or associate's degree. Based on the 2004 interview questions about reasons for enrolling at the NPSAS sample school and plans to transfer in order to pursue a bachelor's degree.

Degree, no transfer	The student's reason for enrolling was to complete a certificate or associate's degree, but not to transfer to a 4-year institution.
Degree and transfer	The student's reasons for enrolling were to complete a certificate or associate's degree, and to transfer to a 4-year institution.
No degree, transfer	The student's reason for enrolling was to transfer to a 4-year institution, but not to complete a certificate or associate's degree.
No degree, no transfer	The student's reasons for enrolling did not include completing a certificate or associate's degree or transfer to a 4-year institution.

Attendance intensity through June 2006**ENINPT3Y**

Indicates the pattern of full time, part time, or mixed full time and part time attendance intensity in the months enrolled at any postsecondary institution between July 2003 and June 2006. Full-time generally means enrollment in 12 or more credit hours per term or 24 credit hours per academic year. Students enrolled full time in an academic year except for summer months (which may have been part time) were considered to be always full time.

Always full time	The student attended full time in all months while enrolled.
Always part time	The student attended part time in all months while enrolled.
Mixed	The student attended full time in some months and part time in some months while enrolled.

Recent (2003) high school graduates enrolled full time fall 2003**FALLHSFT**

Indicates categories of beginning students who graduated from high school with a regular diploma in 2003, were enrolled full time in the fall of 2003, and were working on a degree in the first year (DGPLNY1).

Certificate plans	Recent high school graduates who were enrolled full time in fall 2003 and working on a certificate
Associate's degree plans	Recent high school graduates who were enrolled full time in fall 2003 and working on an associate's degree
Bachelor's degree plans	Recent high school graduates who were enrolled full time in fall 2003 and working on a bachelor's degree

Level of first institution**FLEVEL**

The highest degree or award offered in any program by the first institution attended.

4-year	Institutions that can award bachelor's degrees or higher degrees. Some of these institutions may also offer associate's degrees or certificates.
2-year	Institutions offering certificate or associate's degree programs, or 2-year programs that fulfill part of the requirements for a bachelor's degree or higher at 4-year institutions. These institutions do not award bachelor's degrees.
Less-than-2-year	At least one of the programs offered at these institutions is 3 months or longer, and produces a terminal award or certificate. No program at these institutions lasts longer than 2 years.

Doctorate granting status of first institution**FSECDOC**

Indicates whether the first 4-year institution attended did or did not grant doctorates. Less-than-4-year institutions are not included in this variable.

Doctorate-granting
Non-doctorate-granting 4-year

Type of first institution**FSECTOR**

The level and control of the first institution attended by the student in 2003–04, based on the classification in the 2003 IPEDS Institutional Characteristics file. Control concerns the source of revenue and control of operations (public, private not-for-profit, private for-profit) and level concerns the highest degree or award offered by the institution in any program. 4-year institutions award at least a bachelor's degree; 2-year institutions award at least an associate's degree; less-than-2-year institutions award certificates or other credentials in vocational programs lasting less than 2 years. In most cases, the first institution attended in 2003–04 is also the institution at which the student was sampled for NPSAS:04. However, if the student was enrolled at another institution for more than 3 months in 2003–04 prior to enrolling at the NPSAS sample institution, the prior institution was classified as the first institution attended. Private not-for-profit less-than-2-year institutions are included in the overall totals and totals for less-than-2-year institutions, but the sample size was too small to show as a separate category.

4-year
Public
Private not-for-profit
Private for-profit

2-year
Public
Private not-for-profit
Private for-profit

Less-than-2-year
Public
Private for-profit

Gender**GENDER**

Male
Female

Highest education of parents**PAREduc**

Indicates the highest level of education completed by the student's mother or father, whoever had the highest level. The variable was aggregated to the following categories in this report:

High school or less	Neither parent earned more than a high school diploma or equivalent or they did not complete high school.
Some postsecondary	At least one parent received some postsecondary education, but did not earn a bachelor's degree.
Bachelor's degree or higher	At least one parent attained a bachelor's or advanced degree.

Persistence anywhere through June 2006**PRAT3Y**

Indicates whether the student had attained any degree and/or was still enrolled at any postsecondary institution as of June 2006. Students enrolled in any months after February 2006 were considered to be still enrolled through June 2006, including those who attained a certificate or associate's degree after February 2006.

Attained, not enrolled	The student had attained a certificate or degree and was no longer enrolled in June 2006.
Attained, still enrolled	The student had attained a certificate or degree and was still enrolled at some postsecondary institution in June 2006.
No degree, still enrolled	The student had not attained any certificate or degree but was still enrolled at some postsecondary institution in June 2006.
No degree, not enrolled	The student had not attained any certificate or degree and was not enrolled at any postsecondary institution in June 2006.

Retention at the first institution through June 2006**PROUTFI3**

Indicates the student's enrollment status as of June 2006 at the first institution attended. Students enrolled in any months after February 2006 were considered to be still enrolled through June 2006.

Attained any degree	The student had attained a certificate, an associate's degree, or a bachelor's degree by June 2006 at the first institution.
No degree, still enrolled	The student had not attained any degree at the first institution attended but was still enrolled there in June 2006.
No degree, transferred elsewhere	The student had left the first institution attended without a degree before June 2006 and transferred to a different institution.
No degree, did not enroll anywhere	The student had left the first institution attended without a degree and had not enrolled anywhere else by June 2006.

Race/ethnicity**RACE**

Student's race/ethnicity with Hispanic or Latino origin as a separate category. Based on the census race categories. All of the race categories exclude Hispanic origin unless specified.

White	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.
Black	A person having origins in any of the black racial groups of Africa.
Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Race/ethnicity (continued)**RACE**

Asian/Pacific Islander	A person having origins in any of the peoples of the Far East, Southeast Asia, or the Indian subcontinent. This includes people from China, Japan, Korea, the Philippine Islands, India, and Vietnam. Pacific Islander is a person having origins in the Pacific Islands, including Hawaii and Samoa.
American Indian/Alaska Native	A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.
More than one race/Other	A person having origins in more than one race or in a race not listed above.

Transfer status through June 2006**TFNUM3Y**

Indicates whether the student left one postsecondary institution and then enrolled in another postsecondary institution at any time before June 2006. The student may or may not have transferred any credits between the institutions. Some students transferred more than once. Students who enrolled in more than one institution at the same time are not considered to be transfers.

Never transferred	The student never left one institution and enrolled in another before June 2006.
Transferred	The student left one or more institutions and enrolled in another before June 2006.

Type of associate's degree**UGDEGAA**

Student's associate's degree type during 2003–04 academic year. Based on the 2004 student interview or the type of program reported by the institution attended.

Applied fields	The student was working on an applied associate's degree in occupational or technical programs that are generally terminal degrees.
General education/transfer	The student was working on an academic associate's degree in general education or in preparation for transfer to a 4-year institution.

Appendix B—BPS:04/06 Technical Notes and Methodology

Overview

The 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06) is sponsored by the U.S. Department of Education to respond to the need for a national, comprehensive database concerning issues students may face in enrollment, persistence, progress, and attainment in postsecondary education and in consequent early rates of return to society. The BPS study follows the paths of first-time beginner (FTB) students for a number of years as they navigate the system of postsecondary education, and captures transfer patterns, co-enrollment, and periods of nonenrollment (stopouts).

Unlike the typical retention and attainment studies that follow entering freshmen at a single institution, BPS:04/06 allows researchers and others to study the persistence and attainment of students who enroll in multiple institutions. BPS:04/06 also represents a departure from previous longitudinal studies of high school age cohorts: it starts with a cohort of individuals beginning their postsecondary studies, regardless of when they completed high school. Consequently, BPS:04/06 data include information about nontraditional postsecondary students who have delayed continuing their education after high school due to military service, family responsibilities, or other reasons.

BPS:04/06 is a follow-up to the 2003–04 National Postsecondary Student Aid Study (NPSAS:04), a recurring survey of a nationally representative, cross-sectional sample of postsecondary students. The NPSAS surveys have been implemented every 3 or 4 years since 1986–87, and the data for the most recent survey (for the 2003–04 school year) were released in early 2005. BPS:04/06 represents the first follow-up of the NPSAS:04 FTB students. An additional follow-up interview will occur in 2009.

The BPS:04/06 data collection effort involved interviews of both respondents and nonrespondents to the NPSAS:04 study. The interview took place in one of three ways: self-administered through a web-based instrument, interviewer-administered via computer-assisted telephone interviewing (CATI), or interviewer-administered in person via computer-assisted personal interviewing (CAPI).

Data Sources for BPS:04/06

Because BPS:04/06 is based on NPSAS:04, the sources for NPSAS:04 are relevant to BPS:04/06. Information for NPSAS:04 was obtained from several sources, including the following:

- **Student Records:** Data from institutional financial aid and registrar records at the institutions currently attended. These data were entered at the institution by institution personnel or field data collectors in 2003–04 using a computer-assisted data entry (web-CADE) program or directly downloaded to a data file.
- **NPSAS Student Interview:** Data collected directly from sampled students via web-based self-administered or interviewer-administered questionnaires.
- **Central Processing System (CPS):** U.S. Department of Education database of federal financial aid applications for the 2003–04 academic year.
- **National Student Loan Data System (NSLDS):** U.S. Department of Education database of federal Title IV loans and Pell grants.
- **Integrated Postsecondary Education Data System (IPEDS):** U.S. Department of Education, National Center for Education Statistics (NCES) database of descriptive information about individual postsecondary institutions.

Additional data sources for BPS:04/06 include the following:

- **BPS Student Interview:** Data collected directly from sampled students via web-based self-administered or interviewer-administered questionnaires.
- **Central Processing System (CPS):** U.S. Department of Education database of federal financial aid applications for the 2004–05 and 2005–06 academic years.
- **National Student Loan Data System (NSLDS):** U.S. Department of Education database of federal Title IV loans and Pell grants.
- **SAT File:** Student SAT data from the College Board.
- **ACT File:** Student ACT data from ACT.
- **National Student Clearinghouse (NSC):** A central repository and single point of contact for the collection of postsecondary enrollment, degree, and certificate records on behalf of participating postsecondary institutions.

Sample Design

This section provides an overview of the sample design, including the respondent universe and the statistical methodology.

Respondent Universe

The respondent universe for the BPS:04/06 full-scale study consisted of all students who began their postsecondary education for the first time during the 2003–04 academic year at any postsecondary institution in the United States or Puerto Rico that was eligible for NPSAS:04. The BPS:04/06 sample students included potential FTBs from NPSAS:04, which included confirmed FTBs from the NPSAS:04 student interview, respondents to NPSAS:04 who were initially determined to be non-FTBs but were potentially FTBs based on data from other sources, and NPSAS:04 nonrespondents. The institution and student universes are defined in greater detail in the subsections that follow.

Institution Universe for NPSAS:04

The institutions eligible for NPSAS:04 were required during the 2003–04 academic year to meet all the requirements for distributing federal Title IV aid, including

- offering an educational program designed for persons who have completed a high school education;
- offering at least one academic, occupational, or vocational program of study lasting at least 3 months or 300 clock hours;
- offering courses that are open to more than the employees or members of the company or group (e.g., union) that administers the institution; and
- being located in the 50 states, the District of Columbia, or Puerto Rico.

Institutions providing only vocational, recreational, or remedial courses or only in-house courses for their own employees were excluded. U.S. service academies were excluded because of their unique funding/tuition base.

The institutional sampling frame for NPSAS:04 was constructed from the 2000–01 Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics (IC) file and header files, and the 2000 Fall Enrollment file. The sample of institutions was freshened using the 2002–03 IPEDS, to include a sample of newly formed institutions. Records on the IPEDS files that did not represent NPSAS-eligible institutions were deleted. Hence, records that represented central offices, U.S. service academies, or institutions located outside the U.S. were deleted.

The above institutional eligibility conditions are consistent with previous NPSAS studies with two exceptions. First, the requirement of being eligible to distribute Title IV aid was implemented beginning with NPSAS:2000.¹ Second, the previous NPSAS studies excluded institutions that only offered correspondence courses. NPSAS:04 included such institutions if they were eligible to distribute Title IV student aid.

Student Universe for NPSAS:04 and BPS:04/06

Students eligible for the BPS:04/06 full-scale study were eligible both to participate in NPSAS:04 and identified as FTB students at NPSAS sample institutions in the 2003–04 academic year. Consistent with previous NPSAS studies, the students eligible for the NPSAS:04 full-scale study were those enrolled in eligible institutions and who satisfied all the following eligibility requirements:

- were enrolled in *either* (1) an academic program; (2) at least one course for credit that could be applied toward fulfilling the requirements for an academic degree; *or* (3) an occupational or vocational program that required at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award; and
- were *not* concurrently or solely enrolled in high school, a General Educational Development (GED), or other high school completion program.

NPSAS-eligible students who enrolled in a postsecondary institution for the first time during the NPSAS year (July 1, 2003–June 30, 2004) after completing high school were considered *pure* FTBs and were eligible for BPS:04/06. Those NPSAS-eligible students who had enrolled for at least one course after completing high school but had never completed a postsecondary course before the 2003–04 academic year were considered *effective* FTBs and were also eligible for the BPS:04/06 full-scale study. In the BPS:04/06 full-scale data collection, we sampled from both (a) NPSAS:04 respondents who were identified as (pure or effective) FTBs and (b) NPSAS:04 nonrespondents who were *potential* (pure or effective) FTBs.²

¹An indicator of Title IV eligibility has been added to the analysis files from earlier NPSAS studies to facilitate comparable analyses.

²A potential first-time beginner (FTB) is one who is expected to have been an FTB student during the NPSAS year (July 1, 2003–June 30, 2004) but was not confirmed as such during the student interview. Students were identified as potential FTBs by their sample institution. Other data sources (Central Processing System [CPS], computer-assisted data entry [CADE]) also provide an indication of FTB status for the time period of interest.

Statistical Methodology

Institution Sample for NPSAS:04

The institutional sampling frame for NPSAS:04 was constructed from the 2000–01 and 2001–02 IPEDS IC file and header files, and the 2000 and 2001 Fall Enrollment files. Records on the IPEDS files for NPSAS-ineligible institutions were deleted. NPSAS-ineligible institutions included U.S. service academies, institutions located outside the U.S. and Puerto Rico, and institutions offering no programs of study lasting at least 3 months or 300 clock hours. The IPEDS files were then cleaned to resolve the following types of problems:

- missing enrollment data, because these data are needed to compute measures of size for sample selection; and
- unusually large or small enrollment, especially if imputed, because if incorrect, these data would result in inappropriate probabilities of selection and sample allocation.

Table B-1 presents the allocation of the NPSAS:04 institutional sample to the nine institutional sampling strata. The number of sample institutions was 1,670, accounting for historical rates of participation in Computer Assisted Data Entry (CADE), institution eligibility rates, and rates with which sample institutions provide student lists for sample selection. Table B-1 also shows the resulting institutional sample sizes, which included 1,360 institutions providing student enrollment lists.

A direct, unclustered sample of institutions was selected for NPSAS:04, like the sample selected for NPSAS:2000 and NPSAS:96, rather than a clustered sample used for earlier NPSAS studies. In addition, to allow analysis of the effects of state tuition and student aid policies in individual states, representative samples of institutions were selected from three strata—public 2-year institutions; public 4-year institutions; and private not-for-profit 4-year institutions—in each of the following 12 states: California, Connecticut, Delaware, Georgia, Illinois, Indiana, Minnesota, Nebraska, New York, Oregon, Tennessee, and Texas.

Table B-1. Numbers of NPSAS:04 sampled, eligible, and participating institutions and enrollment list participation rates, by type of institution: 2004

Type of institution ²	Sampled institutions	Eligible institutions ³	Institutions providing lists ¹		
			Number	Unweighted percent	Weighted percent
Total	1,670	1,630	1,360	83.5	80.0
Public less-than-2-year	70	60	50	76.6	74.3
Public 2-year	380	380	320	85.4	77.6
Public 4-year non-doctorate-granting	130	130	110	85.1	70.3
Public 4-year doctorate-granting	230	230	200	86.3	87.1
Private not-for-profit 2-year-or-less	70	70	70	89.0	92.6
Private not-for-profit, 4-year non-doctorate-granting	280	270	220	81.9	78.1
Private not-for-profit 4-year doctorate-granting	220	220	170	77.7	80.8
Private for-profit less-than-2-year	170	160	140	84.0	82.3
Private for-profit 2-year-or-more	110	110	90	84.4	88.2

¹ Percents are based on the eligible institutions within the row under consideration.

² Type of institution is based on data from the sampling frame which was formed from the 2000–01 and 2001–02 Integrated Postsecondary Education Data System (IPEDS).

³ Among the approximately 30 ineligible institutions: 10 closed after the sampling frame was defined, and 10 failed to meet one or more of the criteria for institutional NPSAS eligibility. The remainder were treated as merged institutions because two or more campuses were included on one combined student list.

NOTE: Detail may not sum to totals because of rounding. NPSAS = National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Postsecondary Student Aid Study (NPSAS:04).

Student Sample for NPSAS:04

The NPSAS:04 student sampling design was based on fixed stratum sampling rates, not fixed stratum sample sizes. The design used two student sampling strata for undergraduates (FTB and other undergraduates), three student sampling strata for graduate students (master's, doctoral, and other graduate students), and one stratum for first-professional students. Differential sampling rates were used for the three types of graduate students to get adequate representation of students pursuing doctoral degrees and to limit the sample size for “other” graduate students, who are of limited inferential interest.

The NPSAS:04 student interview data collection procedures were expected to produce about a 70 percent student response rate based on historical experience. The sample sizes were determined using prior NPSAS experience regarding institutional CADE response rates and sample student eligibility rates. A total of 109,210 sample students were selected for NPSAS:04, including 49,410 potential FTBs; 47,680 other undergraduate students; and 12,120 graduate and first-professional students (see table B-2).

Postsecondary institutions are sometimes unable to accurately identify their FTB students. Therefore, students classified as potential FTBs for sampling for NPSAS:04 included both pure FTBs who began their postsecondary education for the first time during the NPSAS year and effective FTBs who had enrolled in but not completed a postsecondary class prior to the NPSAS year. The NPSAS sampling rates for students identified as FTBs and other undergraduate students by the sample institutions were adjusted to yield the desired sample sizes after accounting for expected false positive and false negative FTB rates. The false positive and false negative FTB rates experienced in NPSAS:96 were used to set appropriate sampling rates for NPSAS:04.³

Table B-2. Numbers of NPSAS:04 sampled and eligible students and response rates, by type of institution and student type: 2004

Type of institution and student type ³	Sampled students	Eligible students ⁴	Responding students ^{1,2}	
			Unweighted percent	Weighted percent
All students	109,210	101,010	89.8	91.0
Type of institution				
Public less-than-2-year	3,180	2,580	84.2	90.6
Public 2-year	36,300	32,450	81.3	83.9
Public 4-year non-doctorate-granting	9,200	8,880	91.9	93.3
Public 4-year doctorate-granting	22,350	21,620	93.7	94.2
Private not-for-profit less-than-4-year	3,060	2,770	94.3	94.6
Private not-for-profit 4-year non-doctorate-granting	9,740	9,300	96.3	96.9
Private not-for-profit 4-year doctorate-granting	9,930	9,590	94.5	95.4
Private for-profit less-than-2-year	9,270	8,030	94.9	94.3
Private for-profit 2-year-or-more	6,190	5,790	95.0	96.7
Student type				
Total undergraduates	97,090	89,480	89.3	90.3
Potential FTB	49,410	44,670	91.2	91.4
Other undergraduates	47,680	44,810	87.3	90.0
Graduate/first professional	12,120	11,530	94.2	95.1

¹ A responding student is defined as any eligible student for whom sufficient data were obtained from one or more sources, including student interview, institutional records, and the Department of Education's Central Processing System (CPS).

² Percents are based on the eligible students within the row under consideration.

³ Type of institution is based on data from the sampling frame which was formed from the 2000–01 and 2001–02 Integrated Postsecondary Education Data System (IPEDS). Student type is based on data from the sampling frames which were the enrollment lists received from participating institutions.

⁴ Ineligible students were identified during the student interview or from institutional records if student eligibility was not determined from a student interview.

NOTE: Detail may not sum to totals because of rounding. FTB = first-time beginner. NPSAS = National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Postsecondary Student Aid Study (NPSAS:04).

³ The NPSAS:96 false positive rate was 28 percent for students identified as potential first-time beginners (FTBs) by the sample institutions, and the false negative rate was 9 percent for those identified as other undergraduate students.

BPS:04/06 Full-Scale Sample

The BPS:04/06 student sample consisted of four groups according to their base-year response status:

1. students who responded to the NPSAS:04 student interview who were determined to be FTBs;
2. students who responded to the NPSAS:04 student interview who were initially determined to be non-FTB other undergraduates, but who were potentially FTBs based on data from other sources;
3. a subsample of potential FTBs who were NPSAS:04 study respondents and student interview nonrespondents; and
4. a subsample of potential FTBs who were NPSAS:04 study nonrespondents.

Multiple data sources were used to provide information regarding a student's FTB status during the NPSAS year, including the NPSAS:04 student interview, records from the student's base-year institution via CADE, and federal financial aid sources. The data elements that were examined to estimate a student's likelihood of being an FTB and to construct the frame for the BPS:04/06 sample included the following:

- FTB status from the institution enrollment lists used for NPSAS:04 student sampling;
- FTB status from the CPS;⁴
- FTB status from student-level data obtained from institutional records via CADE;
- student reports (obtained during the NPSAS:04 interview) indicating that they were FTBs during the 2003–04 academic year;
- year of high school graduation;
- receipt of Stafford loan (date loan was first received and number of years loan was received);
- receipt of Pell grant (date grant was first received and number of years grant was received); and
- undergraduate class level.

Using the above indicators, an index was created to estimate the likelihood of being an FTB. A positive index value was assigned to cases with more positive indicators than negative indicators. For example, a student for whom all of the indicators listed above suggested that the student was an FTB were assigned an index value of 8. This index was then used to create a set of decision rules to identify which cases would be included or excluded from the follow-up sample, and which among those included would require additional eligibility screening.

⁴ The U.S. Department of Education's Central Processing System (CPS) contains financial aid application data.

The determination of “low,” “medium,” and “high” likelihood of being an FTB differed for base-year study respondents and base-year study nonrespondents because more data elements were available for the base-year study respondents. Base-year study respondents were considered to have a “low” likelihood of being an FTB if (1) they were not identified as a potential FTB based on CADE or CPS data, (2) they had a negative index value, or (3) they had any Stafford loans or Pell grants that began prior to 2003 (indicating enrollment prior to the NPSAS year). Students with a “low” likelihood of being an FTB were excluded from the BPS sample. If the index was between 0 and 2, the student was classified as having a “medium” likelihood of being an FTB. If the index was 2 or more, then the student was classified as having a “high” likelihood of being an FTB.

Base-year study nonrespondents had very little extant data. Students were considered to have a “low” likelihood of being an FTB if they were not identified as a potential FTB by either CADE or CPS. These students were excluded from the BPS sample. Students who were identified as a potential FTB from CADE (but not CPS) were classified as having a “medium” likelihood of being an FTB. Students who had an indicator from CPS that they were an FTB were classified as having a “high” likelihood of being an FTB.

The NPSAS:04 sample yielded the numbers of students below who either indicated that they were FTBs during the interview and had other institutional records or federal financial aid sources that supported this, or were identified as potential FTBs based on institutional records or federal financial aid sources.

1. Approximately 24,990 students responding to the student interview indicated that they were FTBs during the 2003–04 academic year. Based on a review of the FTB status indicators above, approximately 21,170 of these were identified for inclusion in the follow-up sample. Of the approximately 21,170 included in the follow-up sample, approximately 19,800 had other data that strongly supported their FTB status, and approximately 1,370 of these students had some indications that they were not FTBs; these potential false positives were rescreened during the BPS:04/06 interview to confirm their status. The remaining approximately 3,820 of the original 24,990 were identified for exclusion from the follow-up when multiple data sources confirmed that they could not have been FTBs during the NPSAS year.
2. Approximately 1,420 students were not originally classified as FTBs, but were potential FTBs based on CPS data or because they had a high school graduation date in 2003 or 2004. These potential false negatives were also expected to be screened during the BPS:04/06 interview to verify their status.
3. Approximately 8,860 students did not respond to the student interview but were classified as NPSAS:04 study respondents and were potential FTBs based on CADE or CPS data, more positive than negative indicators among the other variables, and any Stafford loans or Pell grants that began after 2003.

4. Approximately 720 NPSAS:04 sample members were potential FTBs based on information from CADE or CPS, but did not respond to the student interview and did not have sufficient data to be classified as study respondents.

The sample distribution for BPS:04/06 is summarized in table B-3.

Table B-3. Distribution of BPS:04/06 full-scale sample, by base-year response status: 2004

Base-year response status	Number of cases
Group 1	
Base-year study respondent student interview respondents who were classified as FTBs ¹	24,990
Total to be included in sample	21,170
Confirmed FTBs—no additional screening required	19,800
Confirmed FTBs—additional screening required	1,370
Group 2	
Base-year study respondent student interview respondents who were classified as Other Undergraduate (potential false negatives)	28,610
Potential FTBs ²	1,420
Group 3	
Base-year study respondent student interview nonrespondents	10,170
Potential FTBs ²	8,860
Subsample	460
Group 4	
Base-year study nonrespondents	3,890
Potential FTBs ²	720
Subsample	40
Final sample ³	23,090

¹ Because of evidence indicating they were not eligible for inclusion in the cohort of first-time beginners (FTBs), approximately 3,820 base-year study respondents were removed from the follow-up sample.

² Potential FTBs consist of NPSAS respondents not identified as FTBs in the NPSAS student interview, but CPS data or sample institutions indicated that they were likely to be FTBs. Potential FTBs also include NPSAS nonrespondents that were likely to be FTBs based on CADE or CPS data.

³ The final sample of 23,090 students consists of 21,170 students from sample group 1, 1,420 students from sample group 2, 460 subsample students from sample group 3, and 40 subsample students from sample group 4.

NOTE: Detail may not sum to totals because of rounding. CADE = computer-assisted data entry. CPS = Central Processing System. FTB = first-time beginner.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Postsecondary Student Aid Study (NPSAS:04) and 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06).

As noted earlier, approximately 9,580 NPSAS:04 student interview nonrespondents were classified as potential FTBs. Of these, approximately 8,860 were NPSAS:04 study respondents who did not respond to the student interview and approximately 720 were NPSAS:04 study nonrespondents. NPSAS:04 student interview nonrespondents who were potential FTBs were subsampled for follow-up to improve upon the nonresponse bias reduction achieved through the nonresponse adjustments incorporated into the NPSAS:04 statistical analysis weights. For these students, sampling strata were developed from the following characteristics:

- likelihood of being an FTB (medium, high); and
- tracing outcome (located, not located).⁵

Stratification by tracing outcome and the likelihood of being an FTB was used to oversample the students most likely to be located and eligible for the study. The frame was also sorted by institutional sector to ensure representativeness of the sample.

A stratified sample of 500 NPSAS:04 student interview nonrespondents was selected with probabilities proportional to their NPSAS:04 sampling weights. Table B-4 summarizes the BPS:04/06 counts of students eligible for the sample and the sample sizes, including the allocation of the subsample of 500 cases to the two groups of NPSAS:04 student interview nonrespondents. Given that the NPSAS:04 sampling weights were available for all student interview nonrespondents, they served as the basis for computing the BPS:04/06 analysis weights. Therefore, selection of the NPSAS:04 student interview nonrespondents with probabilities proportional to these weights was used to reduce the overall unequal weighting effects for the sample.

⁵ The results from the advance tracing for BPS:04/06 were used to determine whether a student had been located. The National Change of Address file (NCOA) was used to obtain updated addresses for a student, and then Telematch was used to obtain an updated telephone number. The student was classified as located if Telematch either returned a new telephone number or confirmed the current telephone number.

Table B-4. BPS:04/06 sample allocation for NPSAS:04 student interview: 2004

Type of student	Students eligible for sample	Sample size
Total	32,180	23,090
NPSAS:04 student interview respondents classified as FTB during interview	21,170	21,170
Confirmed FTBs	19,800	19,800
Confirmed FTBs—additional screening required	1,370	1,370
NPSAS:04 student interview respondents who were potential FTBs but were not classified as FTBs during interview	1,420	1,420
NPSAS:04 student interview nonrespondents	9,580	500
Study respondents who were student interview nonrespondents	8,860	460
Located, high likelihood of FTB status	3,590	270
Located, medium likelihood of FTB status	550	30
Not located	4,720	160
Study nonrespondents	720	40
Located, high likelihood of FTB status	90	10
Located, medium likelihood of FTB status	250	10
Not located	380	20

NOTE: Detail may not sum to totals because of rounding. The likelihood of being a first-time beginner (FTB) was determined from student financial aid data and institutional record (computer-assisted data entry) data and based on the number and type of indicators suggesting a student was an FTB. The location information was based on whether the advance tracing information from BPS:04/06 either confirmed the existing telephone number or yielded a new telephone number. Eligibility rates were assumed to be lower for NPSAS:04 study nonrespondents because less information was available for these students.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Postsecondary Student Aid Study (NPSAS:04) and 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06).

As listed above, several data sources were used to estimate a student's likelihood of being an FTB prior to the start of first follow-up data collection. After data collection ended, logistic regression models for predicting eligibility among BPS nonrespondents were developed using data from BPS:04/06 respondents and the variables available for the BPS frame construction (date of birth, dates the student began receiving Stafford loans or Pell grants, FTB status according to the institution, CPS, or CADE, and institutional sector). All BPS:04/06 nonrespondents who had responded to the NPSAS:04 interview and were classified as FTB were initially classified as eligible for BPS. Separate logistic regression models were fitted for each of the remaining sampling groups (NPSAS:04 respondents who were *not* initially classified as FTB and NPSAS:04 nonrespondents). At the conclusion of the modeling, 99 percent (4,480) of the nonrespondents were predicted to have a high probability of being eligible for BPS. Added together with the eligible respondents to the BPS interview, a total of 22,180 sample members were initially classified as eligible for BPS.

One additional source of data on the BPS:04/06 sample, the NSC *Tracker* (www.studentclearinghouse.org), was obtained following completion of full-scale data collection and the modeling described above to facilitate imputation of key variables. However, as an additional check on the eligibility of the BPS:04 sample, the *Tracker* data were also used in combination with interview and other extant data to verify the eligibility status of all sample members retained for inclusion in the cohort.

An analysis of enrollment and financial aid data within and across data sources identified a subset of the sample who, based on the results, were determined to be ineligible for membership in the BPS:04 cohort. Table B-5 presents the distribution of these cases by type of student and BPS:04/06 interview response status. The large majority of cases come from the group of NPSAS:04 respondents determined during that base-year interview to be FTBs based on a series of questions in the eligibility section. The distribution of final eligible FTBs is shown in the top half of table B-5.

Table B-5. Allocation of ineligible and final eligible BPS:04/06 sample members by interview status: 2006

Type of student	Total	BPS:04/06	
		Respondent	Nonrespondent (modeled eligible)
Total	23,090	17,710	5,390
Exclusions ¹	900	†	900
Eligible	18,640	14,900	3,740
NPSAS:04 student interview respondents classified as FTB during interview	17,170	13,950	3,220
NPSAS:04 student interview respondents who were potential FTBs but were not classified as FTBs during interview	1,090	800	290
NPSAS:04 student interview nonrespondents	360	140	220
Study nonrespondents	30	10	20
Ineligible	3,550	2,810	740
NPSAS:04 student interview respondents classified as FTB during interview	3,250	2,590	660
NPSAS:04 student interview respondents who were potential FTBs but were not classified as FTBs during interview	260	210	60
NPSAS:04 student interview nonrespondents	30	10	20
Study nonrespondents	10	#	10

† Not applicable.

Rounds to zero.

¹ Students were classified as exclusions if they were deceased, incarcerated, unavailable, etc. Students who were predicted to be ineligible in the modeling were also classified as exclusions.

NOTE: Detail may not sum to totals because of rounding. FTB = first-time beginner. NPSAS = National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Postsecondary Student Aid Study (NPSAS:04) and 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06).

Perturbation

To protect the confidentiality of NCES data that contain information about specific individuals, BPS:04/06 data were subject to perturbation procedures to minimize disclosure risk. Perturbation procedures, which have been approved by the NCES Disclosure Review Board, preserve the central tendency estimates, but may result in slight increases in nonsampling errors.

Imputation

All variables with missing data used in this report as well as those included in the related Data Analysis System (DAS) have been imputed. Item response rates were high for most of the items in the BPS:04/06 interview. However, BPS:04/06 nonrespondents who were determined to be eligible for BPS:04/06 required imputation of their BPS:04/06 data. BPS:04/06 sample members who were NPSAS:04 study nonrespondents also required imputation for NPSAS data.

The following groups of students and types of items were imputed:

- NPSAS:04 derived variables were imputed for the NPSAS:04 nonrespondents who were in the BPS:04/06 sample.
- Students who were not FTBs based on NPSAS:04 interview data but were determined to be FTBs in BPS:04/06 received imputed data for NPSAS:04 interview items that were only administered to FTBs (e.g., attitudes, experiences, plans, etc.).
- Scholastic Assessment Test (SAT)/ACT test scores, high school math courses, and other high school courses and grades were obtained from a merge with the ACT and SAT files. Information on math courses was also obtained in the BPS interview. Values were imputed for any without this information.
- BPS:04/06 first follow-up interview data were imputed for cases with completed interviews with some missing items, abbreviated interviews with some missing sections, and cases who did not have a BPS interview.

The imputation procedures employed a two-step process. First, the matching criteria and imputation classes that were used to stratify the dataset were identified such that all imputation was processed independently within each class. Second, the weighted sequential hot-deck process was implemented,⁶ whereby missing data were replaced with valid data from donor records that match the recipients with respect to the matching criteria.

⁶ The term “hot deck” refers to the fact that the set of potential donors changes for each recipient. In contrast, cold deck imputation defines one static set of donors for all recipients. In all such imputation schemes the selection of the donor from the entire deck is a random process.

Variables requiring imputation were not imputed simultaneously. Basic demographic variables with full information were imputed first. Then, variables with increasing levels of missing data were imputed using previously imputed variables in the determination of optimal matching criteria. The order in which variables were imputed was also determined to some extent by the substantive nature of the variables. For example, basic demographics (such as age) were imputed first, and these were used to process education variables (such as student level and enrollment intensity) that, in turn, were used to impute the financial aid variables (such as aid receipt and loan amounts).

For variables with less than 5 percent missing data, the variables used for matching criteria were selected based on prior knowledge about the dataset and the known relationships between variables. For example, in almost all cases, the student's age and enrollment intensity (full-time/part-time status) were used as matching variables in the imputation process.

For variables with more than 5 percent missing data, a statistical process called Classification and Regression Tree (CART) was used to identify the matching criteria that were most closely related to the variable being imputed. CART (Breiman et al. 1984) is similar to Chi-Square Automatic Interaction Detection (CHAID) (Kass 1980) that was used for the imputation procedures in NPSAS:04. CART, however, is a nonparametric approach to forming imputation classes. This step produced a number of imputation classes that contain sets of donors used to impute recipients belonging to that class.

Next, the imputation classes were used as input to a SAS macro that implemented the weighted sequential hot-deck procedure. Additionally, data were sorted within each imputation class to increase the chance of obtaining a close match between donor and recipient. The hot-deck process was sequential in that the search for donors occurred sequentially, starting with the recipient and progressing up and down the sorted file to find the set of eligible donors from which a random selection of one was made. The process was weighted because it incorporated the sample weight of each record in the search and selection routine.⁷

In some cases, further intervention was needed to ensure accuracy and consistency of imputation, as determined by preexisting edit rules. For example, to impute the level of parents' education when it was known that the parents had some college but the specific education level was unknown, the potential pool of donors was limited to those with at least some college education to prevent imputing parents' education level as less-than-college.

⁷ For further details, see Cox (1980) and Iannacchione (1982).

Weighting

All estimates in this report are weighted to represent the target population described in the sample design section. The weights compensate for the unequal probability of selection of institutions and students in the NPSAS:04 sample. The weights also adjust for multiplicity at the institution and student levels⁸ and unknown student eligibility for NPSAS. Because the students in the BPS:04/06 sample are a subset of the NPSAS:04 sample, the BPS weights were derived from the NPSAS weights. The BPS:04/06 base weight is the product of the first eight NPSAS weight components given in table B-6. The weight for the subsample of NPSAS CATI nonrespondents who were included in the BPS:04/06 data collection was adjusted by the inverse of the subsampling fraction. The BPS:04/06 weights were then trimmed and smoothed within the original NPSAS:04 institution and student strata to reduce the unequal weighting. Finally, poststratification was used to adjust the BPS:04/06 weights so that they matched NPSAS:04 weight sums and known population enrollment and aid totals. All of the weight components, including the probabilities of selection and adjustments, are summarized in table B-6. The weight variable for the student analysis weight is BPS06WT.

The weights were not adjusted for BPS:04/06 nonresponse because the BPS:04/06 data file contains BPS:04/06 nonrespondents with imputed data as well as BPS:04/06 respondents. Logistic regression models for predicting BPS:04/06 eligibility were developed using the BPS:04/06 respondents and the variables available for the BPS:04/06 frame construction; these models were then used to predict eligibility for the BPS:04/06 nonrespondents. The BPS:04/06 nonrespondents predicted to be eligible were included on the data file with imputed data.

⁸ After the 2004 National Postsecondary Student Aid Study (NPSAS:04) institution sample selection, it was determined that in some cases either (1) an institution had merged with another institution, or (2) student enrollment lists for two or more campuses were submitted as one combined student list. In these instances, the institution weights were adjusted for the joint probability of selection. Likewise, students who attended more than one institution during the NPSAS year also had multiple chances of selection. If it was determined from any source (the student interview, or the student loan files [Pell or Stafford]) that a student had attended more than one institution, then the student's weight was adjusted to account for multiple chances of selection.

Table B-6. Summary of BPS:04/06 weight components: 2006

Weight component	Purpose
Institution sampling weight	Account for the institution's probability of selection.
Institution multiplicity adjustment	Adjust the weights for institutions that had multiple chances of selection.
Institution poststratification adjustment	Adjust the institution weights to match population enrollment totals to ensure population coverage.
Institution nonresponse adjustment	Adjust the weights to compensate for nonresponding institutions.
Student sampling weight	Account for the student's probability of selection.
Student subsampling weight	Account for the subsampling of students on paper lists.
Student multiplicity adjustment	Adjust the weights for students who attended more than one institution.
Student unknown eligibility adjustment	Adjust the weights of nonresponding NPSAS students with unknown eligibility.
Student subsampling adjustment	Adjust the weights of the subset of NPSAS CATI nonrespondents who were included in the BPS:04/06 sample
Student trimming and smoothing adjustment	Adjust the weights for outliers, to reduce the design effect due to unequal weighting
Student poststratification adjustment	Adjust the student weights to match known population enrollment and aid totals to ensure population coverage.

NOTE: CATI = computer-assisted telephone interview. NPSAS = National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004 National Postsecondary Student Aid Study (NPSAS:04) and 2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06).

Quality of Estimates

Unit Response Rates and Bias Analysis

The bias in an estimated mean based on respondents, \bar{y}_R , is the difference between this mean and the target parameter, π , i.e., the mean that would be estimated if a complete census of the target population was conducted and everyone responded. This bias can be expressed as follows:

$$B(\bar{y}_R) = \bar{y}_R - \pi$$

The estimated mean based on nonrespondents, \bar{y}_{NR} , can be computed if data for the particular variable are available for most of the nonrespondents. The true target parameter, π , can be estimated for these variables as follows:

$$\hat{\pi} = (1 - \eta) \bar{y}_R + \eta \bar{y}_{NR}$$

where η is the weighted unit (or item) nonresponse rate. For the variables that are from the frame, rather than from the sample, π can be estimated without sampling error. The bias can then be estimated as follows:

$$\hat{B}(\bar{y}_R) = \bar{y}_R - \hat{\pi}$$

or equivalently:

$$\hat{B}(\bar{y}_R) = \eta(\bar{y}_R - \bar{y}_{NR}).$$

This formula shows that the estimate of the nonresponse bias is the difference between the mean for respondents and nonrespondents multiplied by the weighted nonresponse rate. Nonresponse bias could come from a variety of sources, including failure of the institution to provide lists for NPSAS:04, student nonresponse to BPS:04/06, and item nonresponse to the BPS:04/06 interview.

Institution-Level Bias Analysis

An institution respondent is defined as any sample institution for which

- a student list was received that was sufficient for selecting a sample; or
- a sample of students was selected from an NSLDS file of Stafford loan and Pell grant recipients in cases where such a student file was believed to include at least 85 percent of the student population.

Of the 1,630 eligible NPSAS:04 sample institutions, 1,360 were respondents (84 unweighted percent and 80 weighted percent). The institution weighted response rate is also below 85 percent for six of the nine types of institutions. The weighted response rates by type of institution range from 70 percent for public 4-year non-doctorate-granting institutions to 93 percent for private not-for-profit less-than-4-year institutions.

A nonresponse bias analysis was conducted for all institutions and for the six types of institutions with a weighted response rate below 85 percent. The nonresponse bias was estimated for variables known (i.e., non-missing) for most respondents and nonrespondents. Extensive data from IPEDS are available for all institutions. The following variables were used:⁹

- type of institution;¹⁰
- Carnegie classification;
- degree of urbanization;
- Bureau of Economic Analysis Code OBE region;
- historically Black college or university indicator;
- percentage of students receiving federal grant aid;
- percentage of students receiving state/local grant aid;

⁹ For the continuous variables, categories were formed based on quartiles or logical breaks.

¹⁰ Type of institution was used only in the nonresponse bias analysis for all institutions.

- percentage of students receiving institutional grant aid;
- percentage of students receiving student loan aid;
- percentage of students enrolled: Hispanic;
- percentage of students enrolled: Asian or Pacific Islander;
- percentage of students enrolled: Black, non-Hispanic;
- total undergraduate enrollment;
- male undergraduate enrollment;
- female undergraduate enrollment;
- total graduate/first-professional enrollment;
- male graduate/first-professional enrollment; and
- female graduate/first-professional enrollment.

First, for the institution-level variables listed above, the nonresponse bias was estimated and tested to determine if the bias was significant at the 5 percent level. Second, nonresponse adjustments were computed, and the variables listed above were included in the nonresponse models. The nonresponse adjustments (see the weighting section of this appendix) were designed to significantly reduce or eliminate nonresponse bias for variables included in the models. Third, after the weights were computed, any remaining bias was estimated for the variables listed above, and statistical tests were performed to check the remaining significant nonresponse bias.

As shown in table B-7, the institution weighting adjustments eliminated some, but not all, bias. For all types of institutions combined, about 6 percent of the variables showed statistically significant bias due to institution nonresponse prior to the nonresponse adjustment; the variables with significant bias were type of institution, degree of urbanization, OBE region, and graduate/first-professional enrollment. After the nonresponse weight adjustment, none of these variables had statistically significant bias.

Table B-7. Summary of institution nonresponse bias analysis for all institutions, by type of institution: 2006

Type of institution ¹	Before weight adjustments			After weight adjustments		
	Mean estimated relative bias	Median estimated relative bias	Percent significant bias	Mean estimated relative bias	Median estimated relative bias	Percent significant bias
All institutions	0.10	0.05	5.61	0.13	0.05	#
Public less-than-2-year	0.24	0.17	6.35	0.32	0.29	#
Public 2-year	0.14	0.08	6.85	0.24	0.12	#
Public 4-year non-doctorate-granting	0.20	0.14	10.84	0.25	0.23	2.41
Private not-for-profit 4-year non-doctorate-granting	0.10	0.06	2.22	0.18	0.09	1.11
Private not-for-profit 4-year doctorate-granting	0.19	0.06	#	0.22	0.10	#
Private for-profit less-than-2-year	0.12	0.07	4.48	0.22	0.19	1.49

Rounds to zero.

¹ Type of institution based on data from the sampling frame which was formed from the 2000–01 and 2001–02 Integrated Postsecondary Education Data System (IPEDS).

NOTE: Nonresponse bias analysis was conducted for all institutions and the six types of institutions with a weighted response rate less than 85 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

The results varied by type of institution. Before weighting for public less-than-2-year institutions, and public 2-year institutions, 6 percent and 7 percent, respectively, of the variable categories were significantly biased. Variables¹¹ with statistically significant bias before weight adjustment for these types of institutions were percentage of students enrolled who are Black non-Hispanic, OBE region, and percentage receiving institutional grant aid. After the weighting adjustment, no significant bias remained for the variables analyzed for these types of institutions. None of the variables showed statistically significant bias either before or after the nonresponse adjustment for the private not-for-profit 4-year non-doctorate granting institutions.

For the other types of institutions, the percentage of variable categories with significant bias decreased after weight adjustments, but was not completely eliminated. For public 4-year non-doctorate-granting institutions, variables with statistically significant bias prior to the nonresponse adjustment were whether the institution is a historically Black college or institution, total undergraduate enrollment, total graduate/first-professional enrollment, male graduate/first-professional enrollment, and female graduate/first-professional enrollment; after the nonresponse adjustment, the bias was reduced for all of the variables but was still statistically significant for total graduate/first-professional enrollment and female graduate/first-professional enrollment.

For private not-for-profit 4-year non-doctorate-granting institutions, OBE region had statistically significant bias prior to nonresponse adjustment, but this bias was reduced and was

¹¹ The variables listed all have 30 or more respondents.

no longer statistically significant after nonresponse adjustment; one level of variable for this type of institution, the percentage receiving student loan aid, had statistically significant bias after the nonresponse adjustment, but was not statistically significant before the adjustment.

For private for-profit less-than-2-year institutions, the percentage receiving student loan and total undergraduate enrollment showed statistically significant biases prior to the nonresponse weight adjustment; after the adjustment, bias for the total undergraduate enrollment was reduced and no longer significant, but the bias for the percentage receiving student loans was still statistically significant.

In summary, significant bias was reduced for the variables known for most respondents and nonrespondents, which are considered to be some of the more analytically important variables and are correlated with many of the other variables. Further details of the institution-level bias analysis can be found in the *2004 National Postsecondary Student Aid Study (NPSAS:04) Full-Scale Methodology Report* (Cominole et al. 2006).

Student-Level Bias Analysis

As mentioned in the sample design section above, a student respondent was defined as any sample member who was determined to be eligible for the study and had valid data for a selected set of key analytical variables. The BPS:04/06 analysis file contains all eligible sample members. Nonrespondents to the BPS:04/06 interview appear on the analysis file with imputed data.

Of the 18,640 eligible sample students, 14,900 responded, resulting in an unweighted response rate of 80 percent and a weighted response rate of 77 percent. Since these rates are less than 85 percent, a nonresponse bias analysis was conducted. The nonresponse bias was estimated for variables known for most respondents and nonrespondents. Some of these variables were known for all sample members, and the remaining were only known for federally aided students. These variables are included on the DAS and are listed below.

For all sample members:

- type of institution;
- region;
- institution total enrollment;
- CPS match (yes/no);
- Pell grant recipient (yes/no); and
- Stafford loan recipient (yes/no).

For federally aided students:

- Pell grant amount; and
- Stafford loan amount.

The nonresponse bias was estimated for the above variables, and tested (adjusting for multiple comparisons) to determine if the bias was significant at the 5 percent level. This bias analysis was conducted for the entire sample and for each of the institutional strata. As shown in table B-8 for the entire sample, the bias was significant for many of these variables; almost half of the categories had significant bias. However, the relative bias was generally very small; for 7 of the 18 significant variables the relative bias was less than 5 percent, and for another 5 the relative bias was less than 10 percent. This analysis looks at the difference between respondents and nonrespondents. However, a separate weight adjustment for unit nonresponse was not made because the data file contains both respondents and nonrespondents (with imputed data). As a result, the bias after nonresponse adjustment was not compared or evaluated. Because all of the nonrespondents were included in the data file, there was no nonresponse bias for the variables listed in table B-8. As noted earlier, the variables used in this analysis were known for almost all of the sample members (nonrespondents as well as respondents). Only the Pell amount and Stafford amount variables had any missing values. Of the 18,640 eligible students in BPS:04/06, the Pell amount variable was missing for 27 students and was imputed during NPSAS:04 for 40 students. The Stafford amount variable was missing for 27 students and was imputed during NPSAS:04 for 87 students.

Table B-9 summarizes the bias analysis for each institution type. For the total BPS:04 cohort, approximately 45 percent of the variables examined in table B-8 had statistically significant bias, but the mean and median relative bias was low: less than 3 percent. The percentage of variables with statistically significant bias varied from 0 to 22 percent, by type of institution. The public, less-than-2-year institutions and public, 4-year, doctorate-granting institutions had the largest percentage of variables with significant bias due to student nonresponse; however, the mean relative bias was less than 5 percent for these categories. As noted earlier, all respondents and nonrespondents are included on the BPS:04/06 data file, which eliminates bias due to student nonresponse.

Item-Level Bias Analysis

Another analysis examined the items with response rates less than 85 percent. Item response rates (*IRI*) are calculated as the ratio of the number of respondents for whom an in-scope response was obtained (I^x for item x) to the number of respondents who are asked to answer that item. The number asked to answer an item is the number of unit-level respondents (I)

minus the number of respondents with a valid skip item for item x (V^x). When an abbreviated questionnaire is used to convert refusals, the eliminated questions are treated as item nonresponse (U.S. Department of Education 2003).

$$RRI^x = I^x / (I - V^x)$$

A student is defined to be an item respondent for an analytic variable if that student has data for that variable from any source, including logical edits.

Item-level bias analysis was conducted, and none of the items used in the First Look were found to have weighted item response rates less than 85 percent. A more detailed bias analysis of items in the BPS:04/06 interview will be conducted for the *2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06) Methodology Report* (Cominole et al. 2007) (hereinafter referred to as *BPS:04/06 Methodology Report*). For additional information on item nonresponse and bias analysis refer to the *BPS:04/06 Methodology Report*.

A byproduct of the imputation (described in the imputation section of this appendix) is the reduction or elimination of item-level nonresponse bias. Imputation reduces or eliminates nonresponse bias by replacing missing data with statistically reasonable values. Missing data and the associated nonresponse bias for variables such as other grants, dependent student income, and independent student income are usually non-ignorable (i.e., the respondents' distribution patterns differ from those in the full population). Therefore, replacing missing data with reasonable values produces imputed sample distributions that resemble full population distributions, thus reducing, if not eliminating, nonresponse bias. The use of carefully constructed imputation classes, donor-imputee matching criteria, and random hot-deck searches within imputation cells are all designed to ensure that imputed data are reasonable and that the nonresponse bias is ignorable within the imputation classes. The effectiveness of imputation implemented to reduce item nonresponse bias will be presented in the forthcoming *BPS:04/06 Methodology Report*.

Table B-8. Comparison of BPS:04/06 respondents and nonrespondents, by characteristics: 2006

Characteristic	Unweighted respondents	Unweighted non- respondents	Respondent weighted percentage	Nonrespondent weighted percentage	Estimated bias	Percent relative bias	Significant
Type of institution ¹							
Public, less-than-2-year	420	120	1.27	1.26	0.0035	0.3	N
Public, 2-year	4,830	1,510	41.04	48.98	-1.8090	-4.2	Y
Public, 4-year, non-doctorate-granting	1,350	280	9.93	7.50	0.5545	5.9	Y
Public, 4-year, doctorate-granting	2,720	430	18.29	11.68	1.5057	9.0	Y
Private not-for-profit, less-than-4 year	400	130	1.06	1.03	0.0065	0.6	N
Private not-for-profit, 4-year, non-doctorate-granting	1,870	260	9.44	5.28	0.9455	11.1	Y
Private not-for-profit, 4-year, doctorate-granting	1,480	210	5.83	3.14	0.6119	11.7	Y
Private for-profit, less-than-2-year	1,000	460	6.10	9.95	-0.8768	-12.6	Y
Private for-profit, 2-year-or-more	820	340	7.04	11.18	-0.9418	-11.8	Y
Bureau of Economic Analysis Code (OBE) Region							
New England (CT, ME, MA, NH, RI, VT)	980	230	5.16	4.93	0.0524	1.0	N
Mid East (DE, DC, MD, NJ, NY, PA)	2,370	580	14.29	14.24	0.0120	0.1	N
Great Lakes (IL, IN, MI, OH, WI)	2,320	540	16.65	15.22	0.3268	2.0	N
Plains (IA, KS, MN, MO, NE, ND, SD)	1,600	300	7.60	5.90	0.3866	5.4	Y
Southwest (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV)	3,550	890	23.83	22.41	0.3214	1.4	N
Southwest (AZ, NM, OK, TX)	1,480	540	11.62	16.64	-1.1433	-9.0	Y
Rocky Mountains (CO, ID, MT, UT, WY)	530	110	3.90	3.21	0.1568	4.2	N
Far West (AK, CA, HI, NV, OR, WA)	1,830	530	15.51	17.02	-0.3440	-2.2	N
Outlying areas (PR)	250	20	1.44	0.43	0.2312	19.1	Y
CPS record available							
Yes	11090	2670	68.57	65.06	0.7991	1.2	Y
No	3810	1070	31.43	34.94	-0.7991	-2.5	Y
Applied for federal aid							
Yes	11,800	2,890	73.56	71.15	0.5479	0.8	N
No	3,100	850	26.44	28.64	-0.5010	-1.9	N
Unknown	#	#	#	0.21	-0.0468	-100.0	N

See notes at end of table.

Table B-8. Comparison of BPS:04/06 respondents and nonrespondents, by characteristics: 2006—Continued

Characteristic	Unweighted respondents	Unweighted non- respondents	Respondent weighted percentage	Nonrespondent weighted percentage	Estimated bias	Percent relative bias	Significant
Pell grant status							
Received	5,490	1,630	33.76	38.99	-1.1903	-3.4	Y
Did not receive	9,410	2,110	66.19	60.96	1.1899	1.8	Y
Unknown	10	#	0.05	0.04	0.0004	0.8	N
Total Pell amount received in dollars							
\$0–1,550	10,770	2,570	75.18	72.85	0.5296	0.7	N
\$1,551–2,700	1,480	470	8.80	10.21	-0.3213	-3.5	N
\$2,701 or more	2,650	710	16.03	16.94	-0.2083	-1.3	N
Stafford Loan status							
Received	6,040	1,510	35.51	35.06	0.1043	0.3	N
Did not receive	8,860	2,230	64.45	64.92	-0.1074	-0.2	N
Unknown	10	10	0.04	0.03	0.0031	8.1	N
Total Stafford amount received in dollars							
\$0–2,625	13,120	3,070	88.68	83.26	1.2348	1.4	Y
\$2,626–4,125	410	170	3.32	5.52	-0.5018	-13.1	Y
\$4,126 or more	1,380	500	8.00	11.22	-0.7330	-8.4	Y
Institution undergraduate enrollment							
0–1,827	3,540	1,090	19.75	23.48	-0.8473	-4.1	Y
1,828–6,694	3,800	840	23.18	20.67	0.5712	2.5	N
6,695–16,556	3,710	920	27.10	27.59	-0.1113	-0.4	N
16,557 or more	3,770	850	29.61	27.54	0.4727	1.6	N
Unknown	90	40	0.35	0.73	-0.0852	-19.5	N

Rounds to zero.

¹Type of institution is based on data from the sampling frame which was formed from the 2000–01 and 2001–02 Integrated Postsecondary Education Data System (IPEDS).

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004/2006 Beginning Postsecondary Students Longitudinal Study (BPS:04/06)

Table B-9. Summary of student nonresponse bias for all students, by type of institution: 2006

Type of institution ¹	Mean estimated percent relative bias	Median estimated percent relative bias	Percent significant bias
Total	-2.65	0.46	45.00
Public, less-than-2-year	-3.59	0.00	21.43
Public, 2-year	-3.02	0.00	0.00
Public, 4-year, non-doctorate-granting	-8.78	-0.02	6.67
Public, 4-year, doctorate-granting	-4.52	-0.30	20.69
Private not-for-profit, less-than-4 year	-8.27	-1.41	0.00
Private not-for-profit, 4-year, non-doctorate-granting	-12.51	0.16	6.25
Private not-for-profit, 4-year, doctorate-granting	-0.78	0.00	3.33
Private for-profit, less-than-2-year	-0.50	0.15	3.45
Private for-profit, 2-year-or-more	-6.96	0.20	0.00

¹ Type of institution is based on data from the sampling frame which was formed from the 2000–01 and 2001–02 Integrated Postsecondary Education Data System (IPEDS).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004/2006 Beginning Postsecondary Students Longitudinal Study (BPS:04/06)

Standard Errors

To facilitate computation of standard errors for both linear and nonlinear statistics, a vector of bootstrap sample weights was added to the analysis file. These weights are zero for units not selected in a particular bootstrap sample; weights for other units are inflated for the bootstrap subsampling. The initial analytic weights for the complete sample are also included for the purposes of computing the desired estimates. The vector of replicate weights allows for computing additional estimates for the sole purpose of estimating a variance. Assuming B sets of replicate weights, the variance of any estimate, $\hat{\theta}$, can be estimated by replicating the estimation procedure for each replicate and computing a simple variance of the replicate estimates; i.e.,

$$Var(\hat{\theta}) = \frac{\sum_{b=1}^B (\hat{\theta}_b^* - \hat{\theta})^2}{B}$$

where $\hat{\theta}_b^*$ is the estimate based on the b -th replicate weight (where $b=1$ to the number of replicates) and B is the total number of sets of replicate weights. A total of $B = 200$ replicates is used for BPS:04/06. Once the replicate weights are provided, this estimate can be produced by most survey software packages (e.g., SUDAAN).

The replicate weights were produced using a methodology and computer software developed by Kaufman (2004). This methodology allows for finite population correction factors

at two stages of sampling. The NPSAS and BPS:04/06 application of the method incorporated the finite population correction factor at the first stage only where sampling fractions were generally high. At the second stage, where the sampling fraction was generally low, the finite population correction factor was set to 1.00.

Cautions for Analysts

Sources of Error

The estimates in this report are subject to sampling and nonsampling errors. Nonsampling errors are due to a number of sources, including but not limited to nonresponse, coding and data entry errors, misspecification of composite variables, and inaccurate imputations. In a study like BPS:04/06, there are multiple sources of data for some variables (CPS, CADE, Student Interview, etc.) and reporting differences can occur in each. Data swapping and other forms of perturbation, implemented to protect respondent confidentiality, can also lead to inconsistencies.

Sampling errors exist in all sample-based datasets, including BPS:04/06. Estimates calculated from a sample will differ from estimates calculated from other samples even if all the samples used the same sample design and methods.

The standard error is a measure of the precision of the estimate. In this tabulation, each estimate's standard error was calculated using bootstrap replication procedures and can be produced using the BPS DAS software.

Comparing BPS:04/06 Estimates to Prior BPS Estimates

Comparison of results with prior rounds of BPS requires compensation for three changes in the design of the base-year NPSAS survey over time and also for a change in how nonrespondents are handled in the BPS:04/06 data file.

First, prior to NPSAS:04, institutions that only offered correspondence courses were not eligible for the NPSAS. NPSAS:04 included such institutions if they were eligible to distribute Title IV student aid.

Second, for NPSAS:2000, the survey was restricted for the first time to institutions participating in Title IV student aid programs. According to the DAS for NPSAS:96, only about 1 percent of the sampled undergraduates were attending an institution not eligible to participate in Title IV aid programs. When students attending non-Title IV-eligible institutions were excluded from the NPSAS:96 sample, the percentage of undergraduates who received financial

aid increased by less than 1 percent. This small change primarily affects comparisons of students enrolled in less-than-2-year and private for-profit institutions. When using the DAS from prior BPS studies for comparison to the BPS:04 cohort, analysts may want to filter cases in the prior studies (BPS:90 cohort, BPS:96 cohort) based on the variable that identifies whether the student was sampled from an institution that was eligible to participate in Title IV aid programs (T4ELIG).

Finally, a design change in the NPSAS was made, beginning with NPSAS:90, to improve full-year estimates. NPSAS:90 sampled students who were enrolled at four discrete points in time: summer (August), fall (October), winter (February), and spring (June). Since implementation of NPSAS in 1993, institutions have been asked to provide one list that represented students enrolled at any time during the respective financial aid award year. In NPSAS:90, those students who were initially sampled in the fall could have been enrolled for the full academic year.

The BPS:04/06 also differs from prior rounds of BPS in that the BPS:04/06 dataset contains data items and a positive analysis weight for all sample members who were determined to be eligible; this includes nonrespondents as well as respondents to the BPS:04/06 data collection. Nonrespondents to the interview appear on the data file with imputed data for all variables. In previous rounds of BPS, the nonrespondents appeared on the file but did not have data items and had a value of zero for the analysis weight.

Additional Notes on the Accuracy of Estimates

RTI conducted a bias analysis to determine if any variables were significantly biased due to institutional and student-level nonresponse. Several variables were found to have significant bias before weighting. The weighting procedures appear to have reduced the amount of significant bias for these variables. Additional information on the nonresponse bias analysis and weighting procedures can be found in the quality of estimates and weighting sections of this appendix.

Data Analysis System

The estimates presented in the report were produced using the BPS:04/06 Data Analysis System (DAS), a web-based software application that enables users to generate tables for most of the postsecondary surveys conducted by NCES. The DAS produces the design-adjusted standard errors necessary for testing the statistical significance of differences in the estimates. The DAS also contains a detailed description of how each variable was created, and includes question wording for items coming directly from an interview.

With the DAS, users can replicate or expand upon the tables presented in this report. The output from the DAS includes the table estimates (e.g., percentages or means) the proper standard errors¹² and weighted sample sizes for the estimates. If the number of valid cases is too small to produce a reliable estimate (fewer than 30 cases), the DAS prints the message “low-N” instead of the estimate.

In addition to tables, DAS users may conduct covariance analyses, either with Weighted Least Squares or Logistic regressions. Many options are available for output with the regression results. For example, a Winsor filter can be used to eliminate cases with extreme values by deleting a certain percentage of cases from the top and bottom of the range. For a description of all the options available, users should access the DAS website <http://nces.ed.gov/dasolv2>. If users are new to the DAS, the DAS Help Center provides on-line tutorials offering step-by-step instructions in how to use all the functions of the DAS: <http://nces.ed.gov/dasol/help>.

The DAS can be accessed electronically at <http://nces.ed.gov/DAS>. For more information, contact:

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Statistical Procedures

Differences Between Means

The descriptive comparisons were tested in this First Look using Student’s *t* statistic. Differences between estimates are tested against the probability of a Type I error,¹³ or significance level. The significance levels were determined by calculating the Student’s *t* values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing ($p \leq .05$).

¹² The BPS samples are not simple random samples; therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by replication of the sampled population. The procedure used is a bootstrap technique.

¹³ A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

Student's t values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \quad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When estimates are not independent, a covariance term must be added to the formula:

$$\frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2(r)se_1 se_2}} \quad (2)$$

where r is the correlation between the two variables.¹⁴ The denominator in this formula will be at its maximum when the two estimates are perfectly negatively correlated, that is, when $r = -1$. This means that a conservative dependent test may be conducted by using -1 for the correlation in this formula as follows:

$$t = \frac{E_1 - E_2}{\sqrt{(se_1)^2 + (se_2)^2 + 2se_1 se_2}} \quad (3)$$

The estimates and standard errors are obtained from the DAS. If the comparison is between the mean of a subgroup and the mean of the total group, the following formula is used:

$$\frac{E_{\text{sub}} - E_{\text{tot}}}{\sqrt{se_{\text{sub}}^2 + se_{\text{tot}}^2 - 2p se_{\text{sub}}^2}} \quad (4)$$

where p is the proportion of the total group contained in the subgroup.¹⁵ The estimates, standard errors, and correlations can all be obtained from the DAS.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large t statistics may appear to merit special attention. This can be misleading since the magnitude of the t statistic is related not only to the observed differences in means or percentages but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large t statistic.

¹⁴ U.S. Department of Education, National Center for Education Statistics, *A Note from the Chief Statistician*, no. 2, 1993.

¹⁵ Ibid.

A second hazard in reporting statistical tests is the possibility that one can report a “false positive” or Type I error. In the case of a t statistic, this false positive would result when a difference measured with a particular sample showed a statistically significant difference when there is no difference in the underlying population. Statistical tests are designed to control this type of error, denoted by alpha. The alpha level of .05 selected for findings in this First Look indicates that a difference of a certain magnitude or larger would be produced no more than one time out of twenty when there was no actual difference in the quantities in the underlying population. When we test hypotheses that show t values at the .05 level or smaller, we treat this finding as rejecting the null hypothesis that there is no difference between the two quantities.